



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

REGIONAL MASS FATALITY MANAGEMENT IN PANDEMIC SURGE

by

Sharon A. R. Stanley

December 2008

Thesis Co-Advisors:

Anke Richter
Stanley B. Supinski

Approved for public release; distribution is unlimited

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE December 2008	3. REPORT TYPE AND DATES COVERED Master's Thesis	
4. TITLE AND SUBTITLE Regional Mass Fatality Management in Pandemic Surge			5. FUNDING NUMBERS	
6. AUTHOR(S) Sharon A. R. Stanley				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (maximum 200 words) National and state planning documents designate public health as the lead for mass fatality management (MFM). MFM planning, however, demands multiagency participation and full public-business-government leverage. This thesis explores pathways to reach operational regional MFM capability in Ohio, but also has implications for MFM planning across the nation. Survey research was conducted with three key MFM stakeholder groups: county coroners, emergency management directors, and health commissioners. The survey addressed realistic and actionable MFM planning by: 1) identifying state guidance gaps; 2) identifying local/regional operational gaps; 3) assessing regional resource capabilities; 4) categorizing proposed solutions to address identified gaps; and 5) listing legal, financial, and organizational barriers to the solutions. Findings show that the key stakeholder communities are confused, with a willingness to build MFM capacity that is accompanied by worries about who should lead and how to coordinate efforts. Research recommendations include a three-sector collaboration (government-business-citizens) operating at the regional level and public engagement. Another recommendation calls for alignment of state guidance and regional operations with The Joint Task Force Civil Support Working Group MFM areas: command and control; body identification; medico-legal investigation; morgue operations; funeral services; final disposition; and family assistance and behavioral health services.				
14. SUBJECT TERMS Mass Fatality Management; Mass Fatality Response and Recovery; Pandemic; Pandemic Influenza; Public Engagement; Public Health Surge; Public Health Preparedness; Regional Capacity; Regional Response; Surge			15. NUMBER OF PAGES 210	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU	

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. Z39-18

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution is unlimited

REGIONAL MASS FATALITY MANAGEMENT IN PANDEMIC SURGE

Sharon A. R. Stanley
Office of Health Affairs, United States Department of Homeland Security
Colonel (Retired), United States Army Reserve
B.S.N., University of Maryland, Walter Reed Army Institute of Nursing, 1977
M.S. in Community Health Nursing, Wright State University, 1983
M.S. in Strategic Studies, United States Army War College, 2003
Ph.D., The Ohio State University, 1989

Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL
December 2008**

Author: Sharon A. R. Stanley, Ph.D., R.N., R.S.

Approved by: Anke Richter, Ph.D.
Thesis Co-Advisor

Stanley B. Supinski, Ph.D.
Thesis Co-Advisor

Harold A. Trinkunas, Ph.D.
Chairman, Department of National Security Affairs

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

National and state planning documents designate public health as the lead for mass fatality management (MFM). MFM planning, however, demands multiagency participation and full public-business-government leverage. This thesis explores pathways to reach operational regional MFM capability in Ohio, but also has implications for MFM planning across the nation. Survey research was conducted with three key MFM stakeholder groups: county coroners, emergency management directors, and health commissioners. The survey addressed realistic and actionable MFM planning by: 1) identifying state guidance gaps; 2) identifying local/regional operational gaps; 3) assessing regional resource capabilities; 4) categorizing proposed solutions to address identified gaps; and 5) listing legal, financial, and organizational barriers to the solutions. Findings show that the key stakeholder communities are confused, with a willingness to build MFM capacity that is accompanied by worries about who should lead and how to coordinate efforts. Research recommendations include a three-sector collaboration (government-business-citizens) operating at the regional level and public engagement. Another recommendation calls for alignment of state guidance and regional operations with The Joint Task Force Civil Support Working Group MFM areas: command and control; body identification; medico-legal investigation; morgue operations; funeral services; final disposition; and family assistance and behavioral health services.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	PROBLEM STATEMENT	1
B.	RESEARCH QUESTIONS.....	4
C.	LITERATURE OVERVIEW AND CATEGORIZATION	5
D.	ARGUMENT.....	8
E.	METHODOLOGY	10
F.	SIGNIFICANCE OF RESEARCH	11
II.	LITERATURE REVIEW	13
A.	PANDEMIC INFLUENZA IMPACT ON MASS FATALITY MANAGEMENT	14
1.	Lessons from the Past	14
2.	Current Realities Regarding PI and MFM Integration	15
3.	Summary of PI Impact on MFM.....	19
B.	PLANNING AND GUIDANCE DOCUMENTS.....	20
1.	International Guidance for Mass Fatality Management (MFM) ..	21
2.	The United Kingdom	21
3.	Canada: Waterloo Region.....	24
4.	Indian Ocean Tsunami and Myanmar Cyclone.....	24
5.	International Planning Summary.....	25
C.	NATIONAL GUIDANCE AND RESPONSE SUPPORT FOR MASS FATALITY MANAGEMENT (MFM)	26
1.	Emergency Support Function (ESF) 8.....	26
2.	Fatality Management Target Capability	27
3.	Disaster Mortuary Operational Response Teams.....	28
4.	Mass Fatality Working Group Recommendations	29
a.	<i>Questions Related to Authority/Policy and Procedures</i>	<i>31</i>
b.	<i>Questions Related to Already Developed Pandemic Influenza Planning</i>	<i>31</i>
c.	<i>Questions Related to Private versus Public Responsibilities and Roles</i>	<i>31</i>
d.	<i>Questions Related to Family Assistance Efforts.....</i>	<i>32</i>
5.	National Planning Summary.....	32
D.	STATE GUIDANCE AND LOCAL PLANNING FOR MASS FATALITY MANAGEMENT (MFM)	33
1.	Nine-State MFM Plan Review	33
2.	Ohio MFM Plan Review.....	37
3.	State and Local Planning Summary.....	38
E.	REGIONAL RESPONSE FOR SURGE SYNERGY	39
1.	Regional Planning Needs in Surge.....	39
2.	Current Ohio Regional Disaster Planning.....	44
3.	Regional Jurisdiction Summary	45

F.	COMMUNITY CONFIDENCE AND TRUST: BUILDING RESILIENCY.....	46
1.	The Community Trust and Resiliency Linkage	46
2.	Public Engagement	49
3.	Trust and Resiliency Summary	50
G.	LITERATURE REVIEW SUMMARY	50
III.	METHODOLOGY	53
A.	SURVEY DESIGN AND DELIVERY	54
B.	TARGET AUDIENCE	57
C.	SUMMARY	58
IV.	RESULTS AND ANALYSIS	61
A.	RESULTS	61
1.	County Coroners.....	62
a.	Response Rate and Demographics	62
b.	General Awareness, Command-Control (C2), and Coordination.....	62
c.	Current MFM Planning and Operations.....	63
d.	Perception of Operational Strengths, Weaknesses, and Barriers.....	64
2.	County Emergency Management Directors	65
a.	Response Rate and Demographics	65
b.	General Awareness, Command-Control (C2), and Coordination.....	66
c.	Current MFM Planning and Operations.....	67
d.	Perception of Operational Strengths, Weaknesses, and Barriers.....	68
3.	County and City Health Commissioners	70
a.	Response Rate and Demographics	70
b.	General Awareness, Command-Control (C2), and Coordination.....	70
c.	Current MFM Planning and Operations.....	71
d.	Perception of Operational Strengths, Weaknesses, and Barriers.....	72
B.	ANALYSIS	74
1.	Response Rate and Demographics	74
2.	General Awareness, Command-Control, and Coordination	76
3.	Current MFM Planning and Operations.....	79
4.	Perception of Operational Strengths, Weaknesses, and Barriers	82
C.	SUMMARY SURVEY IMPLICATIONS.....	86
V.	RECOMMENDATIONS AND SUMMARY	87
A.	FINAL REVIEW	87
1.	The MFM Challenge: Identifying Gaps, Barriers, and Next Steps	87

2.	Current MFM Guidance Gaps	88
3.	Current MFM Operational and Resource Gaps.....	89
4.	Current MFM Starting Points and Barriers	91
B.	RECOMMENDATIONS.....	91
1.	Align State Guidance with the Mass Fatality Working Group's Guidance	91
a.	<i>Questions Related to Authority/Policy and Procedures</i>	93
b.	<i>Questions Related to Already Developed Pandemic Influenza Planning</i>	93
c.	<i>Questions Related to Private versus Public Responsibilities and Roles</i>	93
d.	<i>Questions Related to Family Assistance Efforts</i>	94
2.	Ensure Alliances that Promote the Megacommunity	95
3.	Engage the Public in Open Talk about a Forbidden Topic	96
4.	Promote Regional Response and Recovery without Reinventing the Wheel	99
5.	Considerations for Implementation of Recommendations	100
6.	Future Research Recommendations	103
C.	SUMMARY	103
APPENDIX A. SURVEY DOCUMENTS OR DOCUMENTS RELATED TO THE SURVEY		107
A.	REGIONAL MFM IN CATASTROPHE SURGE-HC.....	107
B.	REGIONAL MFM IN CATASTROPHE SURGE-CEM	118
C.	REGIONAL MFM IN CATASTROPHE SURGE-CC	129
D.	REGIONAL MFM IN CATASTROPHE SURGE-COMBINED DOCUMENT.....	138
E.	SURVEY COMMO EX - PRE-SURVEY NOTICE – INVITE.....	156
F.	SURVEY COMMO EX – REMINDER.....	157
G.	SURVEY COMMO EX – FINAL NOTICE.....	158
APPENDIX B. SELECT SURVEY RESPONSES.....		159
A.	SELECT CORONER SURVEY RESPONSES	159
B.	SELECT EMD SURVEY RESPONSES.....	165
C.	SELECT HEALTH COMM SURVEY RESULTS	172
LIST OF REFERENCES		179
INITIAL DISTRIBUTION LIST		191

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF FIGURES

Figure 1.	Public Health/Medical Surge in a Geospatially Confined Incident (After: Barbisch, 2006, the SBCCOM Bio Warfare Improved Response Program)...	41
Figure 2.	Public Health/Medical Surge in a Geospatially Dispersed Incident (After: Barbisch, 2006, the SBCCOM Bio Warfare Improved Response Program)...	42
Figure 3.	<i>Wordle</i> Word Cloud from Across-Group Perceptions of MFM Strengths	82
Figure 4.	<i>Wordle</i> Word Cloud from Across-Group Perception of MFM Weaknesses ...	84
Figure 5.	<i>Wordle</i> Word Cloud from Across-Group Perception of MFM Barriers	85
Figure 6.	Megacommunity Thinking (From: Gerencser et al., 2007)	96
Figure 7.	Recommendations' Goal for Success in MFM – Eliminate-Reduce-Raise-Create Grid (After: Kim and Mauborgne, 2005, p. 95)	102

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF TABLES

Table 1.	Pandemic Influenza Impact Estimated by <i>FluAid 2.0</i> (After: CDC, 2000)	17
Table 2.	Analysis of Demographic Data by Majority Response across Target Audiences.....	75
Table 3.	Analysis of Command and Control, Coordination, and Plan Awareness Data across Target Audiences.....	76
Table 4.	Paired T-Test Analysis of Question 4 and 5 by Target Audiences.....	78
Table 5.	Analysis of Current MFM Planning and Operations across Target Audiences.....	80

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

A thesis may be authored by one individual, but the final product requires the assistance of support systems and technical experts extraordinaire.

This thesis would not have been possible without the sound guidance and direction provided by my co-advisors, Dr. Anke Richter and Dr. Stan Supinski, and my research faculty guide, Dr. Nadav Morag, all of the Center for Homeland Defense and Security (CHDS), Naval Postgraduate School. Their willingness to assist and their timely and insightful feedback was inspiring. They ensured my focus and progress by consistently providing encouragement, while as pushing me to critically examine the foundational premises and conclusions of the thesis. Michelle Baker, Graduate Research Assistant at the Office of Workforce Development in the College of Public Health, The Ohio State University, had the dubious honor of first reader/editor. She was also instrumental in electronically building the survey and its distribution lists, a feat of administrative minutiae requiring clear thinking and constant attention. Stephanie Blum, co-CHDS student in the 0703 Cohort, served as final reader/editor. My thanks and commiseration is extended to both of them.

The completion of the program, to include this thesis, would not have been possible without the flexibility given to me by Dr. Frank Holtzhauer, Director of the Office of Workforce Development in the College of Public Health, The Ohio State University. His willingness to let me attend classes, conduct research, and write this thesis as a part of my Ohio Center for Public Health Preparedness workload was greatly appreciated. I am confident that his graciousness will turn out to be a good investment for public health, for the State of Ohio, and for our nation.

I would also like to express my gratitude to all of the faculty and staff at the CHDS. Their continued effort and amazing expertise sustains and grows individuals to guide this nation in an all-hazards environment for disaster response and recovery. I am honored to have been a participant in this graduate level course in Homeland Defense and Security and, specifically, a member of the first National Capitol Region Cohort.

Last of all, in terms of order but not of heart, I would like to thank my family for their love, support, and encouragement. I thank my parents, Don and Marian Rinkliff, for instilling within me a resilient ability to get up from my falls, suck it up, and keep learning—even after half a century. I thank my husband, Mark, for pitching in once again to take some of my share of life’s load while I continued researching and scribbling. I thank my children and their spouses for listening to me as I went through the thesis development, bouncing pieces and parts off of them. Finally, I thank my grandchildren, Katarina and Matt, for giggling at the thought of a grandma who is still in school and running 5K races in between marathon writing sessions.

At the heart of the thesis lies the ability to sustain community spirit in dire times. As a part of that community, I dedicate this thesis to the improvement of the security and defense for my family, friends, and fellow citizens.

I. INTRODUCTION

This thesis proposes to define a network of actionable recommendations for regional mass fatality management planning in the State of Ohio, but also has implications for national and other states' planning for response and recovery. National and many state planning documents designate public health as the lead coordinating entity for mass fatality management. Mass fatality management (MFM) planning, however, demands shared multidisciplinary and multiagency participation as well as public input. Active collaboration among all mass fatality management stakeholders must be achieved in order to develop actionable mass fatality management options at the regional level. This research will assist in MFM planning by focusing on the statewide ability to:

- Identify state guidance gaps
- Identify local/regional operational gaps
- Assess regional resource capabilities
- Facilitate proposed solutions to address identified gaps
- Determine a list of legal, financial, and organizational barriers to the solutions

A. PROBLEM STATEMENT

The *National Response Plan* was released by the Department of Homeland Security (2004a) as an all-discipline, all-hazards plan intended to establish a single, comprehensive framework for managing domestic incidents. It was recently revised to the *National Response Framework* (Department of Homeland Security [DHS], 2008a), further defining key principles, roles, and structures that organize the way that this nation responds to emergencies and disasters. The *Public Health and Medical Services Annex, Emergency Support Function* (ESF) 8 in the *National Response Framework*, was developed to provide coordinated federal assistance to supplement state, local, and tribal response to public health and medical care needs. Functionality for mass fatality events is included in this annex, but planners and practitioners with expertise in mass fatality are

concerned that ESF 8 lacks the strategic and operational acumen necessary to address fatality management adequately at mass-fatality incidents and operations that exceed traditional scene-based thinking and enter into the realm of tens of thousands (Gursky, 2007, p. 3; Northern Command and Department of Health and Human Services [NORTHCOM and DHS], 2006a, p. 2). Fatality Management is a Response Mission within the *Target Capabilities List* and is defined as:

The capability to effectively perform...transportation, storage, documentation, and recovery of forensic and physical evidence; identification of the fatalities using scientific means; certification of the cause and manner of death; processing and returning of human remains and personal effects of the victims to the legally authorized person(s); and interaction with and provision of legal, customary, compassionate, and culturally competent required services to the families of deceased within the context of the family assistance center...through a unified command structure (DHS, 2007b, p. 571).

The 1918 pandemic influenza (PI) surged in three waves, claiming the lives of 50 to 100 million people worldwide, with over 675,000 recorded deaths in the United States (Gursky, 2007, p. 1). Pandemic influenza has been a pressing topic for public health and national preparedness and response in recent years. Based on predicted death modeling for a 1918-like PI outbreak combined with a non-geographically centered effect (i.e., pandemics will affect the nation and globe with nearly parallel waves of resource demand), a traditional mass fatality approach cannot and will not build sufficient capability. The current national response teams for mass fatality, organized under Disaster Mortuary Operational Response Teams (DMORT), were created to respond to large airplane disasters (n = 250), not pandemics (National Disaster Medical System, n.d.). The specter of PI puts local communities and their death care infrastructure on the hook to figure out an action plan for compassionate body disposition.

This type of non-traditional mass fatality planning has not yet been synchronized with actionable plans. Communities and operational disaster planning teams are, understandably, pre-disposed to save lives versus dealing with death. Even when their attention is turned to death, planning efforts address mass fatality in terms of the traditional hundreds (e.g., the DMORT model) with the assumed availability of external

partnering and resources in their time of need. To further complicate matters, the topic of death and matters associated with the dignified disposal of tens of thousands of bodies is not a particularly popular one in the United States society-at-large, in the strategic disaster planning community, or, most certainly, with policy and decision makers that include elected and appointed officials.

Recently, an Ohio workgroup under the guidance of the Ohio Emergency Management Agency (OEMA) completed and released the *Acute Mass Fatalities Incident Response Plan* (OEMA, 2007c). This plan is the first state level document to lay out the responsibilities for mass fatality and bring death industry partners together. The plan is an annex to the state's emergency operation plan and details a traditional, scene-based, DMORT-assisted definition of mass fatalities. It is designed for a surge incident where local entities will most likely be able to mount a sustainable response to a geographically centered occurrence with assistance from pre-defined state and local partners.

With the Ohio Department of Health (ODH) as the lead, mass fatality response and recovery is assumed as a public health function under Emergency Support Function (ESF) 8 at the state level (OEMA, 2007a, p. 8-1). Responsibility for leadership and coordination of mass fatality at the local level, however, is not as clear-cut. The last several years of state and local planning for pandemic influenza response and recovery have been fraught with fingers pointed in other directions as to responsibility for mass fatality leadership. When it comes to the local response level, the most popular candidates for the ever-present question of "who's in charge?" include the county coroner, county emergency management director, and the county or city health commissioner. It is the health commissioner, though, who aligns with the state's emergency plan as well as the national guidance for lead agent status.

The potential Ohio mortality from PI, based on 2006 population statistics, was calculated through Centers for Disease Control and Prevention (CDC) modeling software for PI, *FluAid 2.0* (CDC, 2000). The results based on 1918-like PI modeling with a 25% gross attack rate (a mid-range scenario) predict a first wave of 24,090 deaths above and beyond normal Ohio mortality. This calculation is 13,292 deaths beyond a sustainable

response to fatality surge, with current surge sustainability defined by state plans at 50% over and beyond the normal or between pandemics (interpandemic) baseline (Hade and Porter, 2006). Such failure within the target capability for mass fatality management would likely equate to a public lack of confidence in governmental leadership that could ultimately undermine general public health efforts in all response areas if these MFM deficiencies are not addressed.

While it may be true that all disaster response is “local” within the national disaster planning framework, recent incidents have clearly demonstrated that certain types of disasters quickly reach a catastrophic threshold, almost immediately exhausting local resources for sustainment due to surge response demand and the ensuing recovery period. This is, indeed, the scenario that PI creates as the communicable disease circles the globe and our nation in several waves with resulting mortality surges. If the nation, states, regions, and local entities do not acknowledge the need for a different type of approach for non-scene based mass fatality response, this country will remain unprepared—without the operational capability to address catastrophic mass fatalities realistically related to a widespread and communicable disease like PI.

B. RESEARCH QUESTIONS

The ultimate goal for this research is to assist in the development of actionable MFM operational planning at the intra- and interstate regional level. To attain that goal, an integrated group of recommendations for regional mass fatality management planning will be proposed to contribute to the MFM body of knowledge. The following research questions will guide the investigation into regional MFM during catastrophic surge:

- What are the current gaps in Ohio’s guidance for fatality management?
- What are the current gaps in fatality management operational capability at the local and regional levels?
- What is the current status of fatality management surge resources (e.g., staff, stuff [equipment and supplies], systems) at the local and regional level?

- What are the legal, financial, and/or organizational barriers, if any, to Ohio's mass fatality management?
- How might the information and recommendations gained from this study be used in other states and across the nation?

C. LITERATURE OVERVIEW AND CATEGORIZATION

A review of the literature reveals a significant amount of writing related to a traditional mass fatality response--a response centered on planning for scene-based events with an initial death surge usually related to trauma. A full review of the literature is found in Chapter II of the thesis. Although materials related to mass fatality planning have increased over the last five years, published writing is sparse in the area of MFM related to catastrophic death surge that is not geo-centered (i.e., scene-based) (Connolly, 2006; Fells, 2006; Gerber, 2007). On the national level, the review of the literature reveals an increase in conventional mass fatality literature after September 11, 2001, Hurricane Katrina in 2005, and Pandemic Influenza planning efforts in 2006. On the international level, the increase in mass fatality literature can be tracked to response efforts after the Indian Ocean Tsunami in 2004 and global planning for PI.

The International Mass Fatalities Center (2004) defines a mass fatality incident as "any disaster that causes loss of life and human suffering that cannot be met through usual individual and community resources." The available literature related to regional planning for MFM during catastrophic surge can be grouped into four major categories by a qualitative analysis of dominate themes: current MFM planning and guidance documents at the international, state and local levels; the impact of pandemic influenza planning on MFM; the use of regional planning efforts to achieve surge synergy; and the impact of community trust on population resiliency.

The seminal mass fatality planning literature set for catastrophic surge preparedness, response and recovery to date in the United States was published in 2006. It was produced in conjunction with the Mass Fatality Working Group convened by the United States Northern Command (NORTHCOM) in cooperation with the Department of Health and Human Service (HHS) at Fort Monroe, Virginia, in 2006. The workgroup

included medical examiners, health care workers, mental health professionals, law enforcement, casket manufacturers, funeral directors, and leaders from local, state, and federal government. The working group concurred that there is much yet to be accomplished in the area of mass fatality planning for response and recovery, particularly in mass fatality management related to PI, as indicated by their close-out reports. They published a total of four reports after the two-day working group conference: *Morgue Operations, Identification and Command and Control*; *Funeral Services and Final Disposition*; *Scene Ops to Include Identification and Medico-Legal Protocols*; and *The Provision of Family Assistance and Behavioral Health Services* (Devlin, Gavin, Lyle, and McGovern, 2006; NORTHCOM and HHS, 2006a, 2006b, 2006c). Each of the reports provides strategic guidance to help local and regional jurisdictions as well as operational direction for planning capabilities. The reports' guidance is delivered through a gap analysis of activities that need to be addressed by local and regional planners.

Current state MFM plans are found in one of two vehicles: 1) annexes to the state's Emergency Operations Plan (EOP) under ESF 8 or 2) annexes to the state's pandemic influenza (PI) plans as a support operation. For literature review purposes, various state plans were examined against the recommendations of the NORTHCOM-DHS Mass Fatality Working Group. Ohio's current MFM planning, like the bulk of state plans systematically sampled during the literature review for this research, does not demonstrate a capability to sustain death surge in an event that demands a concurrent statewide MFM response. The state's current EOP MFM annex (OEMA, 2007c), *Acute Mass Fatalities Incident Response Plan*, relies on local jurisdictions to mount a sustainable response factoring in available on-scene support by state and federal partners, including DMORT assets. In addition, a review of state plans on the U.S. pandemic.gov website reveals that MFM aligning with catastrophic surge from PI is not a front-burner issue for most states. Traditional approaches in MFM operational response and recovery are the norm, with only cursory coverage of death issues during a pandemic (Department of Health and Human Services [HHS], n.d.). Ohio's Pandemic Plan devotes two pages to MFM in an 85-page document (Ohio Department of Health [ODH], 2006).

There is a well-known saying in the disaster response community that all emergencies are local. State and federal guidance to assure and support local emergency management capabilities is not new, either. The literature reveals, however, that the state and federal levels of government have recently increased their mandates, guidance, and oversight direction to assure that the national interest is protected through local operations and tactical effort (DHS, 2007a, 2007b, 2008b). In addition, throughout the modern era of emergency management this guidance has been channeled with or without funding from the Federal to the state to the local level in the United States. Current MFM efforts follow this tradition, based on the long-held principle that although all levels of government are required in disaster preparedness, response, and recovery, the local jurisdiction is the primary emergency manager (Gursky, 2007, p. 3).

In the case of MFM, however, Inglesby (2006) points out that local catastrophic capability must include the *regional* level of response as the minimum level of initial coordination. Regions generally have certain accepted cultural characteristics and geographic boundaries and tend to coincide with the service areas of the infrastructures that serve them (The Infrastructure Security Partnership [TISP], 2006, p. 2). There is not enough capability within any response locale, usually defined as the county level by the state, to sustain a response to catastrophic demands for mortuary resources. Regional planning for MFM in Ohio most naturally corresponds with its eight homeland security regions, which are clusters of counties defined as regions on the basis of geographic boundaries and population equity.

The preparedness and response literature is replete with admonitions regarding the necessity of community trust in governmental leadership concerning disasters and the need for community resiliency or bounce-back. Resiliency is named as a necessity when it comes to community response to and recovery from PI, to include mass fatality (Schoch-Spana, 2008). In addition, decision makers must demonstrate trust in the capabilities of their agencies and organizations in order for responders to take risks, be creative, and collaborate. Reina and Reina (2007, p. 36) of The Reina Trust Building

Institute, Inc., argue that the building and breaking of trust is a normal cycle in all organizational relationships, giving credence to the hard work of trust building in preparation for and during disaster.

MFM decisions require technical knowledge and information, as well as weighing competing societal values. For this reason, it is essential that the public become a part of these policy decisions to energize trust between authorities and the public. Most of the nation's current homeland security and health emergency policies do not adequately reflect the civic infrastructure's proven contributions and capabilities in disaster planning (Schoch-Spana, Franco, Nuzzo and Usenza, 2007, p. 8). Community level or population-based level methods to cope with mass fatality can "benefit immensely from the community residents' counsel and assistance in relation to the practical, cultural, religious, and psychological dimensions of death (Schoch-Spana et al., 2007, p. 21). Public and private business engagement in pre-event PI planning for value-laden decisions is a necessary yet currently missing part of national and state planning (Schoch-Spana et al., 2007, p. 21).

In summary, when addressing pandemic influenza and mass fatality management, the published literature would suggest that response and recovery planning is currently lacking, and is strategic [only] when the topic is addressed. Although strategic guidance is valued and absolutely appropriate at the national and state levels, a lack of operational guidance with actionable recommendations forces the question of how subsequent operations can and will be addressed at the regional and local levels. Also, the literature review reveals that the topics of regional level response and community resiliency are missing to date in MFM guidance and operational planning.

D. ARGUMENT

The Joint Task Force Civil Support Working Group on Mass Fatality determined that any regional plan for mass fatality management should include the following seven areas for viability of response and recovery operations (Gursky, 2007, p. 4):

- Command and control
- Body identification

- Medico-legal investigation
- Morgue operations
- Funeral services
- Final disposition
- Family assistance and behavioral health services

These seven areas for MFM viability are based on the expertise of national planners and death industry practitioners representing all aspects of the civilian and military mass fatality community, public and private. While this workgroup may not represent national consensus in these early stages of MFM guidance, its recommendations are informed by experienced professionals and are the only national guidelines currently available, which specifically address catastrophic surge in any detail (Gursky, 2007, p. 9). Any effort for MFM planning should ensure that the partners needed to accomplish operations in the seven areas have been engaged in the process prior to plan production, including both stakeholders and citizens.

While the brunt of the operational response mechanisms does occur at the local level in jurisdictional emergency and disaster, in higher-level disaster (i.e., catastrophe), local jurisdictions must quickly move into multi-effort, collaborative, horizontal operations that challenge the traditional, vertically aligned emergency management system. The reality of a catastrophic incident creates the potential for overwhelming mass casualty and death surge in conjunction with a need for sustained response and recovery. Catastrophic capability starts at the *regional* level of response to address both public and private infrastructure service support (TISP, 2006, p. 2). Pandemic influenza is such a catastrophic incident.

Regions need to build capability for sustained resiliency and operational reality into disaster planning efforts posthaste. This must happen without the usual tendencies to paper the process, shelve it, and respond with a best-intended effort, all the while counting on outside resources when the situation sours. This traditional type of MFM is exactly the response currently written into most of the state planning efforts for Pandemic Influenza (PI). Responders to an incident that is simultaneously affecting numerous communities and many states (i.e., a non-scene based incident) cannot waste time and

effort by counting on outside resources, state or federal, that will be required and competed for nationwide. There will be no nationally supported safety net in such circumstances (HHS, 2008, p. 12). Communities must look to their own stakeholders and citizens to find ways of augmenting and expanding their PI plans in order to ensure sustainability.

In summary, there should be no confidence in a traditional, scene-based approach to mass fatality management for catastrophic surge related to a PI incident or other virulent communicable disease. A traditional model cannot be plugged and played into a catastrophic mass fatality environment that involves a lack of geographic boundaries and demands parallel-competed resources. The planning needed to address mass fatality operations realistically in catastrophic surge is currently in the very early stages of development, even at the national and state levels.

E. METHODOLOGY

A statewide survey was implemented with local leaders in MFM planning and operations. Regional MFM planning constitutes action at the lowest jurisdictional effort during catastrophic surge, but there is no operational model for regional disaster planning involving MFM during catastrophic surge in Ohio. Such a regional approach for response and recovery aligns most naturally with Ohio's pre-existing eight homeland security (HLS) regions. Key MFM local leaders were surveyed to determine their MFM awareness, to include their perceptions of MFM preparation and their knowledge of the potential consequences without such preparation.

The MFM survey engaged three key stakeholder audiences involved in MFM under Ohio Revised Code and gathered information while raising MFM awareness. The target audiences (city and county health commissioners, county emergency managers, and county coroners in Ohio) are the jurisdictional leaders for MFM and play important roles in the planning for such incidents. They were asked to complete separate but aligned surveys: *Regional Mass Fatality Management in Catastrophic Surge: Health Commissioners*; *Regional Mass Fatality Management in Catastrophic Surge: County Emergency Managers*; and *Regional Mass Fatality Management in Catastrophic Surge:*

County Coroners. The surveys covered the seven areas for viability of response and recovery operations in MFM addressed in the previous Argument section, including: awareness of MFM definitions and concepts, unified command, local/regional coordination and guidance, scene and morgue operations, final disposition, family assistance, communication and identification of gaps in MFM planning and operations. The research process was approved as exempt under Category 2 on December 28, 2007, by The Ohio State University Institutional Review Board (IRB), Protocol #207E0871.

The survey was sent electronically through *SurveyMonkey* (The SurveyMonkey Team, 2007) using its “List Management Tool.” Publicly available email addresses through the target audiences’ respective state agency (Ohio Department of Health and Ohio Emergency Management Agency) or their professional organization (Ohio County Coroner Association) were used.

The data was entered into a SPSS-PC database for descriptive and inferential statistical analysis within, between, and among the target audience groups. The survey results provided the foundation for an ongoing statewide MFM regional planning process.

F. SIGNIFICANCE OF RESEARCH

Actionable MFM solutions at the regional level will enable the local players responsible for catastrophic mass fatality to operate consistently, engaging their stakeholders and communities and using state and national guidance. The resulting catastrophic mass fatality planning and the local-regional efforts to implement such planning will provide an operational template for other states. It will also assure state capabilities and, ultimately, national homeland security attention regarding an incident consequence that has the negative ability to deter the public’s resiliency and confidence in governmental leadership during disaster, possibly impacting other response and recovery efforts.

In Ohio, some counties have already begun to incorporate traditional MFM operations into their PI planning without regard for a regional approach or the nature of state and national support in a time of catastrophic surge. These current planning documents will not sustain MFM efforts in an actionable and realistic way. Such

inappropriate plug-and-play tactics without thorough collaborative local discussion are sure to set up the local response for failure, and give a false sense of security to communities that will quickly lose faith in their officials' and agency heads' ability to lead in crisis. In addition, there remains the issue of which local/regional coordinating agency is the primary lead in MFM. Although mass fatality response and recovery is a public health function under ESF 8 at both the national and state levels, there is confusion in the State of Ohio and across other states as to who is leading the MFM effort. This confusion must be addressed to enable the collaborative leadership action needed for successful and sustained MFM.

This thesis is designed to impact mass fatality management at state and national levels by promoting the concept of regional versus local response for catastrophic planning; by assisting locals to apply state and national MFM guidance at the regional operational level for response and recovery; and by proposing working solutions to engage governing entities, stakeholders, and citizens-at-large in the MFM planning process. The research will add to the published literature in the area of MFM in catastrophic surge, an area that is sparse at this time.

II. LITERATURE REVIEW

There is perhaps nothing else so distinctive of the condition and character of a people as the method in which they treat their dead.

- William Tegg, 1876

A review of the literature reveals a significant amount of writing related to a traditional mass fatality response — a response centered on planning for scene-based events with an initial death surge usually related to trauma. Although literature related to mass fatality planning has increased over the last five years, published text is sparse in the area of MFM related to catastrophic surge that is not geo-centered (i.e., scene-based) (Connolly, 2006; Fells, 2006; Gerber, 2007). On the national level, the review of the literature reveals an increase in conventional mass fatality literature after September 11, 2001, Hurricane Katrina in 2005, and pandemic influenza (PI) planning efforts in 2006. On the international level, the increase in mass fatality literature can be tracked to response efforts after the 2004 Indian Ocean Tsunami and global planning for PI.

The International Mass Fatalities Center (2004) defines a mass fatality incident as “any disaster that causes loss of life and human suffering that cannot be met through usual individual and community resources.” The available literature related to regional planning for MFM during catastrophic surge can be grouped into four major categories by a qualitative analysis of dominate themes: the impact of PI on MFM planning; current MFM planning and guidance documents at the international, state and local levels; the use of regional planning efforts to achieve synergy for surge capability; and the relationship between community trust and population resiliency.

A. PANDEMIC INFLUENZA IMPACT ON MASS FATALITY MANAGEMENT

1. Lessons from the Past

The 1918 pandemic influenza (PI) surged globally in three waves, claiming the lives of 50 to 100 million people worldwide, with over 675,000 recorded deaths in the United States (Gursky, 2007, p. 1). PI has resurfaced as a possible impending natural disaster and is currently a critical planning need in public health and national preparedness and response. Based on predicted death modeling for a 1918 — like PI outbreak combined with a non-geographically centered effect (i.e., pandemics will affect the nation and globe with nearly parallel waves of resource demands), a traditional mass fatality approach cannot build or sustain sufficient capability. The current national response teams for mass fatality, organized under Disaster Mortuary Operational Response Teams (DMORT), were created to respond to large airplane disasters (n = 250), not pandemics (National Disaster Medical System, n.d.). The specter of PI puts local communities and their death industry infrastructure on the hook to figure out an action plan for compassionate body disposition and family assistance. How bad might a pandemic involving influenza be?

The CDC predicts that a “medium-level epidemic” could kill up to 207,000 Americans, hospitalize 734,000, and sicken about a third of the U.S. population. Direct medical costs would top \$166 billion, not including the costs of vaccination. An H5N1 avian influenza that is transmittable from human to human could be even more devastating: assuming a mortality rate of 20 percent and 80 million illnesses, the United States could be looking at 16 million deaths and unimaginable economic costs (Garrett, 2005, p. 2).

During each of the 1918 death surges, the undertakers and gravediggers still well enough to work could not keep up with the demand, not to mention the lack of sites to bury the dead and the inability to attain caskets. The resulting bodies stranded at home and the coffins piled high at cemeteries were potent symbols of a nation’s inability to carry on business as usual for population mortality and body disposition (Schoch-Spana, 2000, p. 1412).

In their report to Congressional requesters, the U.S. Government Accountability Office (2007, p. 17) openly reported challenges in coordinating preparedness for PI in critical infrastructure sectors. Those challenges included significant deficits in continuity of operations for PI preparedness and response, a lack of clearly defined federal and state roles, cross-sector interdependencies, and potential legal and regulatory issues. As the United Kingdom's MFM plan clearly states, pandemic influenza demands "different ways of working (Home Office, 2008, p. 17)."

2. Current Realities Regarding PI and MFM Integration

In 2006, a two-week long California heat wave killed an estimated 140 people. The resulting deaths, mainly isolated in one geographic area, produced a surge of bodies that local officials were unable to keep up with. The heat mortality surge resulted in some bodies being stuffed and piled on top of others into the freezers at the Fresno County morgue as coroners attempted to investigate the cause of deaths of victims, many of them elderly and without air conditioning due to a power outage (Matire, 2006). The reports of morgue pile-ups outraged the community, where piling was deemed an unacceptable response option post-incident. Death, especially death occurring as a mass fatality incident, is not a popular topic in the U.S. planning culture. A *Washington Post* (2006) article is entitled: "A Grisly but Essential Issue: Pandemic Plan Skims over How to Deal with Many Corpses (Connolly, 2006)." *The Pandemic Preparedness Handbook* (Philpott, 2007, p. 39) incorporates a one paragraph entry on mortuary issues.

The National Strategy for Pandemic Influenza Implementation Plan (NSPI) (The White House, 2005) was released with the goals of: (1) stopping, slowing, or otherwise limiting the spread of a pandemic to the United States; (2) limiting the domestic spread of a pandemic and disease, suffering, and death; and (3) sustaining infrastructure and mitigating impact to the economy and the functioning of the society. The NSPI indicates that, in comparison to the normal influenza mortality of 36,000, "a pandemic or worldwide outbreak of a new influenza virus could dwarf this impact by overwhelming our health and medical capabilities, potentially resulting in hundreds of thousands of deaths, millions of hospitalizations, and hundreds of billions of dollars in direct and

indirect costs (The White House, 2005, p. 1). An annual summary to the NSPI (The White House, 2007b, p. 20), mentioned the topic of mass fatality once in its 36 pages, and only in conjunction with the admonition that awardees of Federal Pandemic Influenza funding are mandated to address their respective levels of MFM planning.

Public Law No. 109-417, the Pandemic and All-Hazards Preparedness Act (PAHPA) was enacted in December of 2006, establishing an Assistant Secretary for Preparedness and Response (ASPR) with the Department of Health and Human Services along with new strategies to guide PI specific operations (ASPR, 2007, p. 1). The PAHPA annual progress report does not mention mass fatality, death connected planning, or MFM, although mass fatality is one of the 24 criteria (Priority Seven) that all states were asked to address in their PI preparedness plans (ASPR, 2007, p. 12).

States were asked for a one-page summary of the status of current MFM activities, the request citing alternatives to traditional body disposition and funeral gatherings as indicators of planning along with two evidence-based benchmarks: 1) demonstrate the capability to remove bodies from homes properly; and 2) demonstrate the ability to maintain the proper storage during a pandemic. In January of 2007, the Department of Health and Human Services (HHS) asked each state's cooperation in responsibly executing National Strategy for Pandemic Influenza: Implementation Plan Action #6.1.1.2. The due date for states to submit information on selected aspects of their PI preparedness plans was April 2007 (Official Communication from HHS: Federal Department Point of Contact Letter).

No guidance for the different ways of working MFM specific to PI is provided within national documents. As one surge researcher questions: "Is the plan data based, trained for, and tested for validity and operations logistics, or is it merely a written plan that addresses the minimal requirements mandated by various federal funding streams (Phillips, 2006, p. 1103)?"

FluAid 2.0 (CDC, 2000) assists in laying out the possible impact of PI in stark terms: the numbers of anticipated deaths in the program are statistically modeled on three previous influenza pandemics (1918, 1957, and 1968). The statistical output

differentials align with one of these three pandemics in a best case 15%, most likely 25%, and worst case 35% scenario that factors in a case fatality rate and the gross attack rate (those becoming clinically ill). This test version of software created by programmers at the CDC to assist state and local planners by providing estimates of potential PI impact specific to their locality, including deaths, hospitalizations, and outpatient visits. Table 1 displays the results of a *FluAid 2.0* analysis on the impact of pandemic influenza, to include mass fatality calculations, in the U.S. and Ohio using 2006 population estimates.

US POPULATION 2006 = 299,398,484	MODERATE CONSEQUENCE (1957-LIKE): U.S.	SEVERE CONSEQUENCE (1918-LIKE): U.S.	SEVERE (1918- LIKE): OHIO OHIO POPULATION 2006= 11,478, 006
Illness	90 million (30%)	90 million (30%)	3.4 million
Outpatient Care (for those ill)	45 million (50%)	45 million (50%)	1.7 million
Hospitalization	865,000 (4 x seasonal)	9,900,000 (50 x seasonal)	38,000 @191% capacity
Deaths	209,000	1,903,000	75,453 @227% capacity

Table 1. Pandemic Influenza Impact Estimated by *FluAid 2.0* (After: CDC, 2000)¹

Although some planners (Levine, Gebbie, and Qureshi, 2007, p. 575) advocate alternative congregate care sites for infected individuals in public settings such as schools, churches, and convention centers, others are starting to promote the belief that

¹ Ohio information is from an Ohio Department of Health (ODH) 2006 unpublished report: *Pandemic Influenza Impact Summary for Ohio Counties*. The data was produced through statistical runs by M.I. Meltzer, H.A. Shoemaker, and M. Kowalski using CDC's *FluAid 2.0: Beta Test Version* released in 2000.

much of the treatment will more realistically take place within the home. Given the numbers of those infected and demanding care, it is increasingly apparent that even well-planned and staffed alternate care centers may not fully answer the PI surge needs. Given the likelihood of care for PI victims within the home setting, it certainly is not a far leap to anticipate that many deaths will ultimately occur at home, as well.

The following excerpt is from a 1918 scenario as reported in the *Baltimore Sun* (Smith, 2006):

When coffins ran out, the city spent \$25,000 on an emergency supply. The mayor asked mourners to make do with any available caskets, while undertakers requested they bathe and dress their relatives' bodies. Many funerals were held at home to avoid wider infection.

One must remember that in 1918 death care and even viewings in the home were an accepted fact of life; not so in 2008.

Although it is conservatively estimated that the State of Ohio can sustain a 50% surge in death registration capabilities, the number of deaths handled to include body disposition, funeral services, and other core elements of MFM is unknown (OEMA, 2007c, p. 82). An unpublished survey assessment of state morgue capacity completed in 2007 for the Ohio Department of Health by The Ohio State University Center for Biostatistics found that the average number of burials, cremations, and entombments conducted in an average year per funeral director was around 150, with the total number of statewide on-site storage of remains at 11,189 (Hade and Porter, 2007, p. 3). As previously demonstrated in Table 1, this storage capacity cannot sustain the additional deaths from a PI incident.

In 2004, Ohio recorded 106,350 deaths (CDC, 2006). Without using a seasonal death distribution, the monthly average of deaths in terms of sheer numbers, then, is 8862 ($106,350/12$). Taking the 50% death registration capability for surge as a starting indicator, a month produces 13,293 deaths ($8862 \times .50 = 4431$, then $4431 + 8862$) in sustainable surge. How does that number compare to a first wave of influenza, one of three waves if a 1918 scenario is repeated? Using results from Table 1 for Ohio along with predictions based on a first wave (one of three), the outcome is 24,900 ($75,453 \times$

.33) deaths over and beyond the baseline. If one centers the potential first-wave death segment in a month's time period, there are approximately 11,607 (24,900 – 13,293) deaths beyond the sustainable surge in Ohio. In other words, 24,900 deaths is a catastrophic death surge that is beyond the calculated sustainable levels (13,293) of mass fatality for the state; the state's capabilities have been overrun by 2x the existing capabilities. In addition, this calculation assumes that death by PI is the only incident filling the morgues with dead bodies. Also, the calculation is not predicated on absenteeism in the death industry workforce due to illness and unwillingness to show up for work to sustain the PI death surge operations.

The PI figures calculated for Ohio represent death chaos — chaos that the Ohio Department of Health is listed for by name as the primary agency lead, as well as chaos for all governmental leaders and death industry infrastructure members. The loss of capability for mass fatality could well equate to a public lack of confidence in governmental leadership, ultimately crushing general public health response and recovery efforts if not controlled.

3. Summary of PI Impact on MFM

Pandemic influenza will produce a global inundation of very sick individuals, most likely in waves. Given the number of predicted deaths in a 1918-like PI outbreak, combined with the requirement for a non-scene or non-geographically centered response (i.e., pandemics will affect the U.S. and world with nearly parallel demands for resources specific to influenza), traditional mass fatality management practices must morph into different ways of working within the emergency management and death industry community. Currently crafted EMACs (Emergency Management Assistance Compacts), IMACs (Intrastate Mutual Aid Compacts), in-state MOUs (Memorandum of Understandings) and other outside assistance cannot be realistically factored into local or state response plans. As Secretary Leavitt repeatedly calls for in the 2008 Pandemic Planning update, every individual must be involved in preparing for an incident that affects every individual because PI demands "...the collaboration of the full range of stakeholders — State and local officials, public health and medical professionals,

religious leaders and ethicists, the business community, organized labor, non-governmental organizations, and individuals from all walks of life (HHS, 2008, p. 2).”

B. PLANNING AND GUIDANCE DOCUMENTS

There is a well-known saying in the disaster response community that all emergencies are local. State and federal guidance to assure and support local emergency management capabilities is not a new concept either. The literature reveals, however, that the state and federal levels of government have recently provided increased mandates, guidance, and oversight direction to assure that national interest is protected through that local level effort (DHS, 2007a, 2007b, 2008b). Throughout the modern era of emergency management, this guidance has been channeled with or without funding from the federal to the state to the local level in the United States.

The U.S. federal government did not become actively involved in disaster response until the 1930s and then did so only on an ad hoc basis, providing funding to repair highways and bridges damaged by natural disasters or building flood-control projects. During the 1950s the preeminent perceived risks were nuclear war and nuclear fallout, and most emergency management efforts were funneled into civil defense programs at all levels of government. During the 1960s and '70s, a number of large natural disasters beset the country, notably the Ash Wednesday storm (1962), the Alaskan earthquake (1964), Hurricane Camille (1969), and the San Fernando Valley earthquake (1971). Each of these events required federal response and recovery assistance, yet public policies governing emergency management continued on an ad hoc basis, with a multiplicity of government agencies and departments each having partial responsibility for or governing authority over disaster response. In 1979 the Federal Emergency Management Agency (FEMA) was created in order to centralize emergency management functions at the federal level. (S. L. Cutter, 2005).

Current MFM efforts follow this tradition, based on the long-held principle that although all levels of government are required in disaster preparedness, response, and recovery, the local jurisdiction is the primary emergency manager (Gursky, 2007, p. 4).

This literature review of current MFM planning documents starts at the international level. This is an appropriate entry given the global nature of a pandemic outbreak such as influenza. It underscores one of the key elements that set PI disaster planning apart: worldwide omnipresence of infection in pandemic incident.

1. International Guidance for Mass Fatality Management (MFM)

A literature review of MFM at the international level reveals snippets of MFM planning within to the World Health Organization's (WHO) mass casualty system planning (WHO, 2007, pp. 13, 20) calling for the necessity of dealing with death in such incidents. A review of the international plans posted on WHO's *Pandemic and Epidemic Alert Response* website reveals that separately published MFM plans are not the norm in international planning (WHO, 2008). In the WHO endorsed *Management of Dead Bodies after Disasters* (Morgan and Tidball-Binz, Eds., 2006), a resource to help prepare for technical aspects of mass fatality post-disaster, the recommendations are approached traditionally. Although the manual is a sound resource for body identification techniques, it does not include operational concepts for catastrophic death surge with its parallel demand in resources across all regions. Indeed, there is no mention of a necessity for international or national MFM planning in the entirety of the WHO's *Global Influenza Preparedness Plan* (2005). The closest language found in a single WHO objective: "To prepare national authorities, other partners, and the public for a likely rapid progression of events, additional contingency measures, and disruptions to normal life."

2. The United Kingdom

The Home Office of the United Kingdom (U.K.) drew up a draft national mass fatality plan related to a possible influenza pandemic, then pushed that plan out to every level where operational partners would ultimately make or break its success (Crime Reduction and Community Safety Group, Public Order Unit-Mass Fatalities Unit [CRCSG], 2007). *A Framework for Planners Preparing to Manage Death* is aimed at "local planners preparing contingency plans for the extraordinary circumstances (Home Office, 2008, p. 7)." The Home Office asked for a review from planners, professionals in

the field, and faith communities on practicality, gaps, the appropriateness of guidance, and comments in general. The Home Office was quite blunt in what it was looking for from the local level review: “We are not seeking your views on the likelihood of these events occurring, the necessity for such planning, nor the planning assumptions themselves, all of which are beyond the scope of this *Framework* (CRCSG, 2007, p. 1).” It asked for stakeholder input on the practicality of the guidance, whether there were gaps in the recommendations, and what the concerns were regarding working on MFM issues in surge.

The U.K. planning assumptions for MFM include three projected scenarios: best, moderate, and worst case fatality rates based on attack rate modeling from past pandemics. The local authorities and service providers were asked to assess their risks and take “trigger points” into account for planning purposes (CRCSG, 2007, p. 9). Trigger points are defined in the plan as tipping points (e.g., absenteeism or limited storage space) that would necessitate an alternate way of working in the subsequent surge of death. The plan addresses different ways of working with three defined transition phases to manage the mass fatality incident. Phase One measures are those which individual business areas identify and implement unilaterally through single-agency business continuity plans. Phase Two measures rely on the cooperation between the organizations involved in MFM. Phase Three operations would require legislative legislation to provide adequate surge capability for MFM (Home Office, 2008, p. 9).

The Home Office lays out all of the current guidance documents and local roles per existing legal code (e.g., authorities, service providers, central government.) Emphasis in the plan is given to the fact that a mass fatality incident will not allow business as usual and that the public, although needing reassurance, must become a part of the solution (CRCSG, 2007, p. 29). The *Framework* presents over 45 pages of practical recommendations to be used on the local level, with admonishments for open jurisdictional dialogues and suggestions on the needed membership for such a dialogue. The U.K. plan underscores the fact that there will be no resources in MFM that the locals do not preplan or secure prior to or during the response.

U.K.'s *Framework* clearly lays out command and control, with the need for public engagement regarding every recommendation as the guidance lays out the expectations of the Central Government, regional resiliency entities, and local service providers (Home Office, 2008, pp. 17-19). The legal framework surrounding mass fatality management in the U.K. is clarified early through a Key Legislation section (Home Office, 2008, p. 8). The death industry in the U.K. is very similar to that of the U.S. in that there are physicians, coroners, and registrars involved in the medico-legal activities. Like the U.S., U.K. attending physicians are the primary point for death certification. Also like the U.S., the coroner and his/her office is still the appropriate authority if foul play or unusual circumstances are suspected in the death. Once PI exists in country, the U.K. will not consider the PI deaths of individuals meeting an epidemiologically-defined case definition as coroner's cases. Since the coroner is found at only the jurisdictional level in both the U.K. and U.S., this conservation of coroner expertise preserves a valuable expert resource. This is not to say that coroners will not be involved in the U.K. PI response and recovery, but simply that mortality due to PI does not necessitate a death investigation by the coroner into the circumstances.

Although the U.K. has not yet had an opportunity to prove its planning approach in a pandemic, the U.K. has the most advanced MFM plan publicly available. It has incorporated true stakeholder and citizen inclusion, partnership recommendations, clear indications that locals are responsible for grass-roots-up operational details, with responsibility at the national level for needed legislative attention to provide a consistent, liability-controlled operational environment — all elements of proven success in generic disaster planning that puts its plan front and center. In addition, the U.K. tested elements of the plan during its February 2008 Exercise Winter Willow with subsequent lessons identified in a published after action plan (Health Protection Agency, 2008). Those lessons were incorporated into the final version of the *Framework*.

The *Framework* puts U.K.'s Home Office on record as offering their expertise and advice without false reassurance of pending assistance and national resources. In the closing section of the U.K.'s *Framework*, a recommendation for public communication is made to government officials and stakeholders: "tell it all, tell it truthfully and tell it quickly (CRCSG, 2007, p. 29)."

3. Canada: Waterloo Region

Canada's Waterloo Public Health Region provides another look at international planning for MFM. The region's plan goes to the core of pandemic influenza mass fatality planning by stating up front that "this type of mass fatality response will be unlike any other (Region of Waterloo, Public Health, 2007, p. 4)," even an incident like the Asian tsunami. The planners note the extended time period of the PI waves of infection and the intense psychosocial effect of a global incident. Waterloo's plan includes resource recommendations to sustain response across the multiple outbreaks and guidance to name key leaders and local agencies well in advance, establishing dialogue before the PI occurrence. The Canadian plan also provides checklists to help those pronouncing death know when to exclude the death from a coroner's investigation and to make a presumptive diagnosis involving influenza as the cause of death. It is acknowledged that mass fatality, although not a popular topic in any situation, must be broached with an upfront discussion about impending decisions. While not laid out with the depth and breadth of the U.K. *Framework*, the document provides actionable guidance at a regional level to mortuary stakeholders.

4. Indian Ocean Tsunami and Myanmar Cyclone

An investigative team going into Thailand, Indonesia, and Sri Lanka after the South Asian tsunami disaster systematically documented how the dead were managed in terms of body recovery and storage, identification, disposal of human remains, and health risks from the dead bodies (Morgan, Sribanditmongkol, et al., 2006). The team found that the technological and logistical challenge of recovering and identifying the victims was extremely difficult due to a lack of refrigeration for preservation, temporary burial,

sufficient forensic capability on a *global* level, and a lack of national or local mass fatality plans. The respectful treatment of dead bodies and comfort of the remaining living was hampered by the absence of practical field guidelines and an international agency that could provide technical support. The authors indicate that there were no technical guidelines to manage mass fatalities following large natural disasters at the time of the Tsunami response (Morgan, Sribanditmongkol, et al., p. 0809).

The Myanmar cyclone aftermath unfolded during this writing. There is no evidence that the international response capabilities for MFM has come of age during the four years passing since the Asian tsunami. Given the ruling junta's reluctance to allow aid into their country, which also occurred in Myanmar during the tsunami, there are no immediate opportunities to observe response improvements. Mortality estimates for the cyclone, with geographical dispersion to include Yangon, a major population center and the Irrawaddy delta, is estimated at 60,000 - 100,000.

According to the calculations, the Ayeyarwady region was hardest hit, with 1.8 million people affected; another 1.1 million were potentially affected in the Yangon administrative division. At least 100,000 people in both the Bago East and Mon divisions were also affected. The United Nations estimates that as many as 220,000 are missing following the cyclone and that 63,000 to 101,000 people were killed. (Johns Hopkins Bloomberg School of Public Health News Center, 2008).

5. International Planning Summary

The international literature portrays mass fatality management in PI as a special operation — something to be addressed in planning that goes well beyond the norm of fatality management. The distinctiveness of MFM in pandemic is readily apparent, as evidenced by the U.K.'s plan urging the public health ministry to “talk truth,” as well as Canada's warning that this type of mass fatality incident is truly unique. There has been no testing of these PI plans at the international level, with the exception of a national exercise in the U.K., although the tsunami in Asia and cyclone in Myanmar make it clear that MFM into the thousands wreaks havoc with resource requirements, even during a one-time, geographically confined incident.

C. NATIONAL GUIDANCE AND RESPONSE SUPPORT FOR MASS FATALITY MANAGEMENT (MFM)

1. Emergency Support Function (ESF) 8

Homeland Security Presidential Directive (HSPD)-8 was issued in December of 2003. It established national policies to strengthen the preparedness of the United States to prevent, protect against, respond to, and recover from threatened or actual terrorist attacks and major disasters, and it included a goal for national preparedness (DHS, 2007a, p. 22). The national preparedness goal resulted in the *National Preparedness Guidelines* which incorporated *The National Response Plan* (NRP), as national doctrine for preparedness to include *Emergency Support Function #8: Public Health and Medical* (DHS, 2004b). The 2004 NRP, an all-discipline, all-hazards comprehensive framework for managing domestic incidents, was updated to the *National Response Framework* (NRF) in January 2008. The NRF remains a guide for conducting a nationwide all-hazards response, “built upon scalable, flexible, and adaptable coordinating structures to align key roles and responsibilities across the Nation, linking all levels of government, nongovernmental organizations, and the private sector (DHS, 2008b, p. i).”

The Public Health and Medical Services Annex, Emergency Support Function (ESF) 8 in the NRP-NRF, was developed to provide coordinated federal assistance to supplement state, local, and tribal resources in response to public health and medical care needs. ESF 8 paves the way for a coordinated disaster response, and is primarily devoted to detailing the coordination of the emergency support for life safety and life saving measures. Functionality for mass fatality events is included in this annex, but is subsumed by the heavy health response emphasis on the living. The NRF (2008a, pp. 8-7) addresses MFM in a traditional, non-pandemic approach, including a total of twelve lines of text to address the HHS support role in tracking and documenting of human remains, establishing temporary morgue facilities, determining the cause and manner of death, and identifying human remains using scientific means (presumably calling on the use of the federal DMORT teams). Recognized national subject matter experts in MFM, including the Mass Fatality Working Group, are concerned that ESF 8 lacks the strategic

and operational insight necessary to address mass-fatality events and operations that exceed traditional, scene-based MFM scenarios by tens of thousands (Gursky, 2007, p. 3; NORTHCOM and HHS, 2006, p. 2). The U.S. Department of Health and Human Service (HHS) is the lead for ESF 8 as well as the coordinating entity (DHS, 2008a, p. 8~3).

2. Fatality Management Target Capability

The *Target Capabilities List* (TCL) is a part of the National Preparedness Guidelines capability-based planning process. The TCL (DHS, 2007b, p. iii) describes the capabilities related to the four homeland security mission areas of prevent, protect, respond, and recover, and it provides measurement standards for various preparedness capabilities. Fatality Management is the last capability in the Response Mission area and is defined as:

...the capability to effectively perform scene documentation; the complete collection and recovery of the dead, victim's personal effects, and items of evidence; decontamination of remains and personal effects; transportation, storage, documentation, and recovery of forensic and physical evidence; determination of the nature and extent of injury; identification of the fatalities using scientific means; certification of the cause and manner of death; processing and returning of human remains and personal effects of the victims to the legally authorized person(s); and interaction with and provision of legal, customary, compassionate, and culturally competent required services to the families of deceased within the context of the family assistance center. ... Fatality management operations are conducted through a unified command structure (DHS, 2007b, p. 519).

The Fatality Management TCL guidance is filled with various teams and resource tallies of federal assets available for national deployment to assist local and state response, as well as recommendations on what resources jurisdictions need to pre-position or plan to bring to the incident for fatality management response. The planning assumption for this capability and the subsequent capacity measurements is based on an Improvised Nuclear Device scene-based scenario. The TCL section specifically states that this guidance can also be applied across several scenarios, to include a disease outbreak (DHS, 2007b, p. 529).

The only language specific to a PI incident is encapsulated in four bullet points emphasizing that the disease spread would occur simultaneously across the United States, affecting most communities virtually at once and making it very unlikely that federal assets would be available for local/state support (DHS, 2007b, p. 534). No other guidance is provided specific to this non-scene based, communicable disease scenario, nor are there recommendations for special considerations to be undertaken by local, regional, or state jurisdictions in terms of resource planning. The pandemic influenza bullets are found under a section entitled “Approaches for Large-Scale Events” and co-located with such incidents as a terrorist release of anthrax and pneumonic plague, as well as nerve agents and a major earthquake. The placement seems to try and differentiate mass fatality management in terms of incident severity. Indeed, the listed resource element units after this section indicate a heavier federal resource load for response in these large-scale events. Curiously, this resource listing occurs after the document has already stated that federal assets will not be available for local/state use in PI due to the simultaneous nature of disease outbreak across the nation.

3. Disaster Mortuary Operational Response Teams

Most current MFM plans include the use of Disaster Mortuary Response Teams (DMORT) and traditional scene-based models.² A DMORT is a national asset developed in the early 1980’s by the National Funeral Directors Association (NFDA) to address a need for standardization within their profession for mass fatality incident response (National Disaster Medical System [NDMS], n.d.). The NFDA realized the need for a wide array of death industry partners to achieve true capability in coordinating MFM. They invited others to collaborate and DMORTs now cover the nation across ten regions, organized under the Department of Health and Human Services (HHS). The Federal Emergency Management Agency (FEMA) maintains two Disaster Portable Morgue Units

² The adjective *traditional* versus *legacy* is intentionally used here. Legacy, as defined by Webster’s New College Dictionary, is “being or having to do with something, esp. something outdated or otherwise undesirable, which is carried over from a previous system, business operation, etc.” DMORTs are not legacy resources, but must be factored into MFM planning only as their make-up and operational function allows.

(DPMUs), one on the east coast and one on the west (NDMS, n.d.). There is also a separate national DMORT-WMD team, trained to respond to terrorist incidents involving weapons of mass destruction of a biological, chemical, or radiological nature.

The DMORT was designed for a regionally based mass fatality response involving a geographically confined fatality surge.³ A DMORT includes volunteers from medical and forensic practice who have formed a response team under the guidance of the National Disaster Medical System (NDMS). DMORT personnel can identify victims, use forensic pathology and anthropology methods, and provide mortuary services. Their traditional model of MFM fits well, for example, with multiple/large vehicular or airplane crashes where these special skills are in demand for traumatized bodies. The DMORTs are a proven valuable national asset with over 1200 highly trained and skilled practitioners. The DMORT response in PI, though, would be limited by its member numbers, its mandated use as a federal (not state or local) asset, and its memberships' primary allegiance to first response in their home communities.

4. Mass Fatality Working Group Recommendations

The seminal set of mass fatality planning literature for catastrophic surge preparedness, response, and recovery in the United States was published in 2006-2007. It was produced in conjunction with the Mass Fatality Working Group, convened by the United States Northern Command (NORTHCOM) in cooperation with the Department of Health and Human Service (HHS). The two-day conference occurred in the spring of 2006 at the Joint Task Force Civil Support (JTF-CS) headquarters in Fort Monroe, Virginia. The event took place after increasing concern on the part of its lead planners that mass fatality was not being addressed in a coherent, coordinated, or actionable

³ DMORT teams opened a morgue with 5,000 capacity for Katrina's victims in September 2005 in the small Louisiana town of Saint Gabriel. The facility was installed in a large warehouse not far from the state capital Baton Rouge, and was reported to be able to process 144 bodies a day with a staff of 100 working in shifts to keep it going around the clock.

direction at the national, state, or local levels (Gursky, 2007, p. 3).⁴ The workgroup included medical examiners, health care workers, mental health professionals, law enforcement, casket manufacturers, funeral directors, and leaders from local, state, and federal government. The Mass Fatality Working Group concluded that much must yet be accomplished in the area of mass fatality planning for response and recovery, particularly in mass fatality management related to PI. They published a total of four reports post-conference: *Morgue Operations, Identification and Command and Control*; *Funeral Services and Final Disposition*; *Scene Ops to Include Identification and Medico-Legal Protocols*; and *The Provision of Family Assistance and Behavioral Health Services* (Devlin et al., 2006; NORTHCOM and HHS, 2006a, 2006b, 2006c).

The Joint Task Force Civil Support Working Group on Mass Fatality determined that any regional plan for mass fatality management should include the following seven areas for viability of response and recovery operations (Gursky, 2007, p. 4):

- Command and control
- Body identification
- Medico-legal investigation
- Morgue operations
- Funeral services
- Final disposition
- Family assistance and behavioral health services

This workgroup's publications are as close to a formal representation of national MFM consensus that the U.S. has come. Their recommendations are the only national level guidelines currently available, which specifically address catastrophic death surge in any detail (Gursky, 2007, p. 9). Each of the reports provides direction to develop operational direction for planning capabilities. The reports' guidance is delivered

⁴ The team was led by Dr. Elin A. Gursky, Principal Deputy for Biodefense of the National Strategies Support Directorate, ANSER (Analytical Services) of the Homeland Security Institute and Senior Fellow at the Johns Hopkins Center for Civilian Biodefense Strategies. Dr. Gursky has been active in the homeland security arena with a public health focus since August 2001 with several hallmark documents to her credit, including: *Drafted to Fight Terror: U.S. Public Health on the Front Lines of Biological Defense*; *The Threat of Smallpox: Eradicated but Not Erased*; *Hometown Hospitals—The Weakest Link? Bioterrorism Readiness in America's Rural Hospitals*; *Progress and Peril: Bioterrorism Preparedness Dollars and Public Health*; and *Anthrax 2001: Observations on the Medical and Public Health Response*.

through a gap-analysis of MFM activities to be addressed by local and regional planners. Those identified gaps are presented below as open questions to determine measures and partnerships needed to achieve MFM capability (NORTHCOM and HHS, 2006a, pp. 1, 3; 2006b, pp. 11-12; 2006c, pp. 2-3):

a. Questions Related to Authority/Policy and Procedures

How might fatality management lines of authority and relevant policies and procedures be established at the national and state levels in order to provide a template or guide for local planning? What elements within this guidance are critical for field expedient identification and disposition of pandemic influenza victims in a nation of varied cultures, religious backgrounds, socio-economics and values? Since communication and clear lines of authority during all stages of the pandemic are essential to successful MFM planning and operations, how can relevant stakeholders be identified and included in the development of *pre-event* pandemic education plan for emergency center operations personnel and the public?

b. Questions Related to Already Developed Pandemic Influenza Planning

How should currently mandated state pandemic influenza plans be adapted and/or modified to ensure realistic mass fatality management at the local level? Who should be involved in coordinating and leading this effort? Given that it is the current capacity of local funeral and mortuary services operations that will ultimately be overwhelmed, how will protocol be defined for handling, processing, safe keeping, and disposition of large numbers of remains in a respectful and dignified manner?

c. Questions Related to Private versus Public Responsibilities and Roles

How does a professional body of practice (i.e., the death care industry) develop a non-traditional first responder mindset in order to deliver field expedient mortuary services in disaster surge? Why are funeral service personnel, suppliers and other mortuary service operations not routinely included in disaster planning for a PI

surge that will result in hundreds and thousands of bodies to identify and humanely dispose of? How do the local level responders prepare for this role without a promise of state or federal assistance? The ability to respond effectively to a pandemic event depends on the availability of critical resources (e.g., vaccine, fuel, utilities, labor, raw materials, transportation, security, communication bandwidth, etc.) as well as the surge competencies of the professional group utilizing the resources (e.g., public education messages, pre-established partnerships, incident management knowledge). How might state PI plans be developed, adapted and/or modified to address resource, logistics, and funding concerns down to assurance of local capacity?

d. Questions Related to Family Assistance Efforts

How might a virtual Family Assistance Center (FAC) be established in a communicable infectious disease environment using the internet, newspapers and television to disburse educational information to the public? How might a national database for missing persons be set up to address the concerns related to relatives and others who are unaccounted for? Given the contagious nature of PI and given that the gathering and milling about of people at the FAC will be not be feasible during social distancing, how will FACs operate? Since death surge related to PI will be chronic rather than static (acute and scene-based), how will waves of deaths over a period of several weeks and involving multiple family members at different times, affect needed distribution of information? How can the needed information be pushed rather than pulled (i.e., needing to bring people in) to obtain information about potential fatalities? Since local jurisdictions will be overwhelmed with response, how will the federal level of government coordinate and manage a nationwide need for information regarding missing persons in a highly mobile and family-separated society?

5. National Planning Summary

The U.S. has made a concerted effort to provide guidance through all manner of disaster preparedness frameworks and discourse to assist state and local planning regions rise to the challenge of a coordinated and successful response and recovery effort when

faced with all-hazard disasters and catastrophe. Each of the national guidance documents has gone through at least one major revision since its entry post-September 11, improving its use for the stakeholders involved in each of the emergency support functions and target capabilities. When it comes to the subject of MFM, however, there is not a lot to be found in the national planning documents, pre- or post-revisions. Although briefly mentioned, MFM is by and far a shadow topic in national planning. The hallmark national literature on MFM is found courtesy of publications related to a 2006 NORTHCOM and HHS conference to determine gaps and potential solutions in MFM, albeit more questions were proposed than actual operational answers.

D. STATE GUIDANCE AND LOCAL PLANNING FOR MASS FATALITY MANAGEMENT (MFM)

Current state MFM plans are found in one of two vehicles: 1) as parts of or annexes to the state's Emergency Operations Plan (EOP) under ESF 8: Public Health and Medical Services, or 2) as parts of or annexes to the state's pandemic influenza (PI) plans as a support operation. For literature review purposes, various state plans were examined against the seven recommendations of the Mass Fatality Working Group (Gursky, 2007, p. 1). The state plans, most often written as higher level strategic guidance documents, contain some elements for local operational planning, as well.

1. Nine-State MFM Plan Review

Nine states were selected as a convenience sample via an internet search process. This sample was selected using the Google search engine and categorization of the state by its most recent Trust for America's Health (TFAH) preparedness rating category. TFAH released its fifth annual report in 2007, revealing state-by-state health preparedness scores based on ten key indicators to assess health emergency preparedness capabilities. Trust for America's Health website describes the organization as "a non-profit, non-partisan organization dedicated to saving lives by protecting the health of every community and working to make disease prevention a national priority." Since the rating of states by public health readiness started in 2002, they have received much attention to include rated states wanting to increase their scores. The first three "hits"

(states) within each of the three categorical TFAH scores of 6-7, 8, 9-10 were selected for examination of MFM planning during a consistently worded web-search: “mass-fatality-management-state.” There were no states scoring less than a six in TFAH’s report. The following states were selected for this literature review of MFM specific content (the respective TFAH score in parentheses): Virginia (10); Illinois (10); North Carolina (9); California (8); Minnesota (8); Texas (8); Florida (7); Montana (7); and Iowa (6).

For each selected state, the state EOP ESF 8 annex and PI plan were examined for MFM language and the MFM planning specifically compared against the Mass Fatality Working Group’s seven-area recommendations. Although the convenience sample was chosen within a TFAH score framework, the resulting review of the states’ MFM plans, to include local plans in some cases, does not necessarily reveal a positive correlation for MFM capability for catastrophic surge (e.g., PI) in light of the respective TFAH score. That is, the TFAH score does not correlate with the state’s MFM preparedness capability, at least on paper.

Virginia’s “Mass Fatality Planning (2008),” incorporates a mixture of eight presentations, flowcharts, and pamphlets that represent the state’s MFM planning to include PI. Virginia does not differentiate pandemic mass fatality from traditional MFM approaches so much as it compares the anticipated death surge needs to a normal flu season, except “much worse.” The flowcharts clarify how deaths should be handled for disposition in and out of hospital, assisting locals to determine which agencies and jurisdictions should be involved in death certification. The state has run the CDC *FluAid 2.0* (2000) statistics for each of its emergency planning regions and has publicly released the anticipated numbers of deaths related to PI for each. A separate brochure, “Information for Managing Pandemic Influenza Fatality Events in Virginia (2006),” lays out the scenario of catastrophic surge during a PI incident, providing a four column folded brochure of considerations. A paragraph in the brochure emphasizes the differences in PI mortality approaches that local responders/government will want to take into account, e.g., PI deaths as non-coroner cases, human remains as a non-significant threat for handlers using universal precautions, tracking of remains in a mass casualty environment, and consideration of storage spaces. There is no guidance as to how the

locals are actually to work through the MFM issues at hand. In light of the Mass Fatality Working Group recommendations, though, the State of Virginia presents some of best-aligned state planning to date given their categorized brochure and supporting plans. Virginia has been working on a comprehensive systems approach to mass casualty planning since the late 1990's to include elements of MFM (Green, 2000).

The State of Illinois includes a MFM planning in its *Pandemic Influenza Preparedness and Response Plan, Annex 5* (2006). After determining state mortality numbers using CDC's *FluAid 2.0* (2000) calculations, the annex moves into traditional MFM realms, citing the availability of state and DMORT assistance. North Carolina parallels this traditional MFM type of approach on two pages in its *Pandemic Influenza Plan, Appendix K-1* (2006). Neither Illinois or North Carolina give any detailed MFM guidance to their local stakeholders that is aligned with the Mass Fatality Working Group's seven areas of command and control, body identification, medico-legal investigation, morgue operations, funeral services, final disposition, or family assistance and behavioral health services.

California has done some exemplary work in local MFM planning through one of the CDC funded Advanced Practice Centers (APCs): Santa Clara County (Lee, LaDue, and Linstrom, 2007). The Santa Clara County APC is the only known public health entity nationally that has published MFM planning documents explicitly based on the Mass Fatality Working Group's seven recommendations. There is enough awareness within the state in terms of MFM planning that in May of 2007, Government Technology published an article entitled "No Longer Taboo" which detailed California plans to move forward and meet the challenge of mass fatality (Gerber, 2007). That said, the current round of California PI-specific planning completed in 2006 is relatively silent on MFM specifics, allowing only one paragraph and interspersed statements that essentially state that mass fatality planning needs to be taken into consideration by the local partners.

Texas (Texas Hospital and Public Health Emergency Preparedness Programs, 2008) is currently developing a MFM plan, having recognized the state's prior planning for disaster responses and recovery did not include this death surge response, to include PI planning. Regional meetings are currently underway to develop regional plans after

receiving training specific to mass fatality. The meetings are incorporating PI-specific MFM efforts to include collaborative meetings at the regional level, which involve multi-disciplinary teams. A Mass Fatalities Regional Planning and Training event was hosted in February 2008 by the Central Texas Regional Advisory Council and facilitated by the National Mass Fatalities Institute, Kirkwood Community College, Cedar Rapids, Iowa. Since that time, the region has met for additional policy and planning sessions. (Email communication with Danielle Schmitz). Montana's 2005 *Pandemic Influenza Response Plan* mentions in its section on public health responsibilities that a mass fatality plan should be developed and exercised, but only two short bullet points include mass fatality language.

Florida has published its MFM plan (Florida Medical Examiner Commission [FMEC], 2006) as a part of its state's Comprehensive Emergency Management Plan. The 24-page document covers an array of MFM topics including concepts of operations, responsibilities of the medical examiner, medico-legal investigation, records management, tracking systems, final disposition, and family assistance. Florida's MFM plan comprehensively covers each aspect of the Mass Fatality Working Group's recommendations for MFM planning areas for traditional trauma-based, geo-centered death surge. The document also includes references, statutory citations, and jurisdictional listings (FMEC, 2006, pp. 22-23). Although the plan would certainly lend a planning foundation to MFM in a PI environment, it would still require a companion plan or additional guidance given the different approaches needed (e.g., in the medico-legal investigation realms and morgue operations area.) There is no mention of MFM in Florida's PI plan.

Iowa's *Pandemic Influenza Response Plan* (2006), published by the Iowa Department of Health, does not mention mass fatality planning. Iowa serves as home to both of the nation's self-identified centers for mass fatality planning.⁵

2. Ohio MFM Plan Review

For purposes of this research, Ohio is the state of immediate interest. The *Ohio Emergency Operations Plan* (EOP) (OEMA, 2006) was developed soon after the Ohio Emergency Management Agency was created within the Department of Public Safety in 1999 under Ohio Revised Code 5502.22. The plan is revised on a regular basis by state mandate. It contains "Emergency Support Function (ESF) #8: Public Health and Medical Services," where the Ohio Department of Health (ODH) is listed as the Primary Agency, the agency with coordination responsibility for the ESF (OEMA, 2007a).

In 2007, a small cell of state planners facilitated by the OEMA completed and released Tab D to Emergency Support Function #8: the *Acute Mass Fatalities Incident Response Plan*. This document provides state-level mass fatalities text that defines the organization and assignment of responsibilities for what the working group has termed "acute mass fatalities." The plan is also unique in that it uses an EOP format to delineate clearly who should be responsible for what operational aspects during the response and recovery period of a mass fatality incident.

Like Florida's MFM guidance, however, Ohio's EOP MFM annex provides guidance for a traditional definition of mass fatalities operations: a scene-based incident creating a one-time surge. The plan relies on local jurisdictions to mount a successful response by factoring in available on-scene support by state and federal partners, including DMORT assets. The *Acute Plan* does not account for a disease-based, geographically diverse scenario incorporating thousands of deaths from a contagious

⁵ Both the National Mass Fatalities Institute <http://www.nmfi.org/> and the International Mass Fatalities Center <http://www.massfatalities.com/> are housed in Cedar Rapids, Iowa. The National Mass Fatalities Institute was founded in 2000 with a congressional grant administered through the Centers for Disease Control and Prevention. Its mission is to prepare communities for the effective management of mass fatalities events. The International Mass Fatalities Center is a 501(c) 3, non-profit organization and promotes its mission as providing disaster experienced instructors on-site and via the Internet to ensure the appropriate care of the fatalities while caring for the emotional and physical needs of survivors, workers and their families in the aftermath of a disaster.

disease: a catastrophic surge in mass fatalities. The same planning cell has recently been at work to devise what will be called the *Non-Acute Mass Fatalities Incident Response Plan*. The *Non-Acute Plan* was written as the companion document to the *Acute Plan*, with non-acute deaths defined as those deaths which do not occur suddenly, but through a situation developing over an extended time period due to disease, biological, chemical, or radiological contamination to include pandemics. It is slated for release in the fall of 2008 to be used as state guidance for local operations after its full review by various state agencies (OEMA, 2008).⁶

Ohio's Pandemic Influenza Preparedness and Response Plan (ODH, 2006, pp. 41-43) devotes two pages to MFM in an 85-page document.

The MFM portion of the plan states that:

- The Electronic Death Registration (EDRS) will be streamlined by ODH during the pandemic
- Large numbers of deaths will occur outside health care facilities
- Local jurisdictions must have the capability to effectively perform all aspects of fatality management (ODH, 2006, pp. 34-35 and 67-68)

The first bullet is the only one that is addressed with guidance within Ohio's PI plan. Ohio's EDRS timeline of activities include training, research, and statutory changes to better manage death registration during the surge. Nothing is mentioned regarding body collection, storage, disposition, or Family Care Centers.

3. State and Local Planning Summary

Current state MFM plans are currently found as a part of or in an annex to the state's Emergency Operations Plan (EOP) under ESF 8 or as a part of or an annex to the state's pandemic influenza (PI). Most examples of a PI MFM inclusion were written in 2005, during the federal mandate for state pandemic influenza plans. Very few states have stand alone MFM plans. For those that do, the states are not necessarily equipped to

⁶ By virtue of this study, the author had the opportunity to join the mass fatality planning cell partway through the writing of the *Non-Acute Mass Fatalities Incident Response Plan*. Areas from the Mass Fatality Working Group have been incorporated into the final draft of this plan, released for review to the agencies in spring 2008.

have local planners achieve MFM capability in pandemic surge. Often, this lack of capability can be traced to the use of traditional MFM response to achieve a non-scene based approach. Neither does current state MFM planning recommend a need for regional response and recovery to conserve resources that will surely be in parallel demand status. Ohio's current MFM planning, like the bulk of state plans previously reviewed, does not demonstrate the capability to sustain death surge in a pandemic event that demands a concurrent statewide MFM response.

E. REGIONAL RESPONSE FOR SURGE SYNERGY

1. Regional Planning Needs in Surge

The traditional verticality of the local-state-federal levels of disaster paradigm is firmly etched in the nation's pre-2005 planning documents, as well as its resulting emergency planning and response infrastructure (DHS, 2008b, pp. 1-11). This vertically aligned and perpendicularly phased-in process to prevent, protect, respond, and recover in disaster goes something like this:

- Disasters occur even with the best in preventive efforts and presumably in a geographically concentrated area
- Local response mechanisms (i.e., emergency services) are launched according to pre-planning on paper and advanced coordination arrangements between officials, responders, and agencies.
- State support for the local disaster response is "at the ready," along with federal resources, if called on; pre-planning for these higher level support operations are also on paper and coordinated in advance

The concept of catastrophic disaster (e.g., Hurricane Katrina) and disasters without boundaries (e.g., pandemics) demands capacity beyond traditional verticality. While the brunt of operational response mechanisms do occur at the local level in emergency and disaster, in higher level disaster (i.e., catastrophe), local jurisdictions must be prepared to move immediately into multi-echelon and horizontally collaborative action. This type of operation does not cleanly follow a perpendicularly leveled emergency management system. Public health surge capacity refers to the ability to implement core public health activities in disaster such as mass prophylaxis and

vaccination, risk communication, epidemiologic investigation, and, of course, mass fatality management (MFM) (Koh et al., 2006, p. 211). Community capability in public health surge in catastrophic incidents demands a *regional* response as the minimum level of initial coordination (Inglesby, 2006). “Comprehensive regional preparedness is key to ensuring that communities, states, and the nation can expeditiously respond to and recover from disasters of all types, particularly extreme events (TISP, 2006, p. 3).”

A disaster planning region is considered as an area that is defined as such by stakeholders in order to address an issue and may include municipalities, counties, a portion of a state, across-state clusters, and/or across-nation borders. Regions generally have certain accepted cultural characteristics and contiguous geographic boundaries, and tend to coincide with the service areas of the infrastructures that serve them (TISP, 2006, p. 2). There is not enough capability within any response locale, usually defined as a county by most states, to sustain a response to catastrophic surge when there is parallel demand for resources. In addition, the traditional “we’ll be there in 72 hours” backup response from the federal level is not timely enough to prevent the initial surge from progressing into the chaos of a catastrophe in terms of resource needs.

The following figures provide graphic representations of public health/medical surge scenarios of surge realities in catastrophe. Figure 1 presents a traditional event that is geospatial in nature. In other words, consequence results, to include MFM, are limited by some kind of incident boundary and subsequent resource and needs surge is bounded itself by local surge capabilities meeting up with state and federal capabilities within a defined time period.

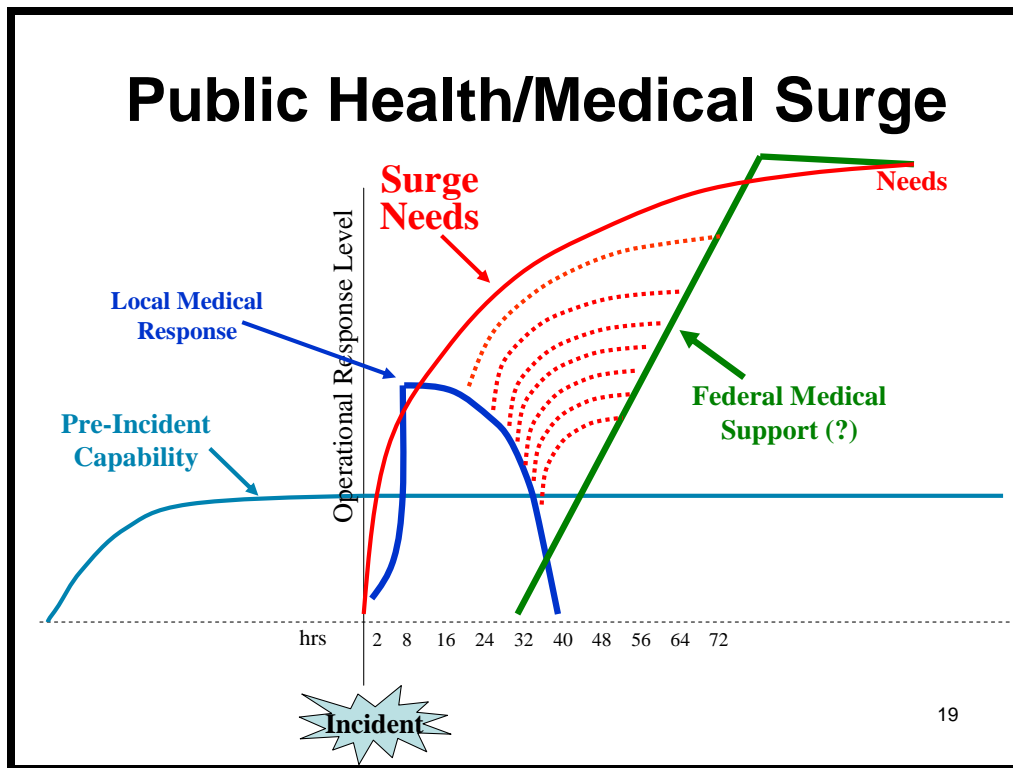


Figure 1. Public Health/Medical Surge in a Geospatially Confined Incident (After: Barbisch, 2006, the SBCCOM Bio Warfare Improved Response Program)

Now bring in a worst-case scenario in terms of catastrophic surge: a scenario involving a non-geographically centered incident like pandemic influenza. Such a disaster would produce a demand for parallel response to needs that immediately negates capabilities in the traditional perpendicular response method. This means that the Federal Medical Support shown in Figure 1 does not arrive, an insufficient amount of support arrives, and/or any support that arrives comes at a much later date as shown in Figure 2. The National Strategy for Pandemic Influenza (NSPI) purposefully designed a decentralized plan emphasizing the possibility of state, regional, and local *solo* capabilities for preparedness, planning, and response during a PI incident (The White House, 2005). Secretary of Health and Human Services, Michael O. Leavitt warns: “A pandemic is not like a hurricane or an earthquake, where resources and help can be shifted from one area to another. Should it occur, every community will need to rely on

its own planning and its own resources as it fights the outbreak (HHS, 2008, p. 3).” Figure 2 shows surge needs unrestrained by an ability of the vertical system to fill the void.

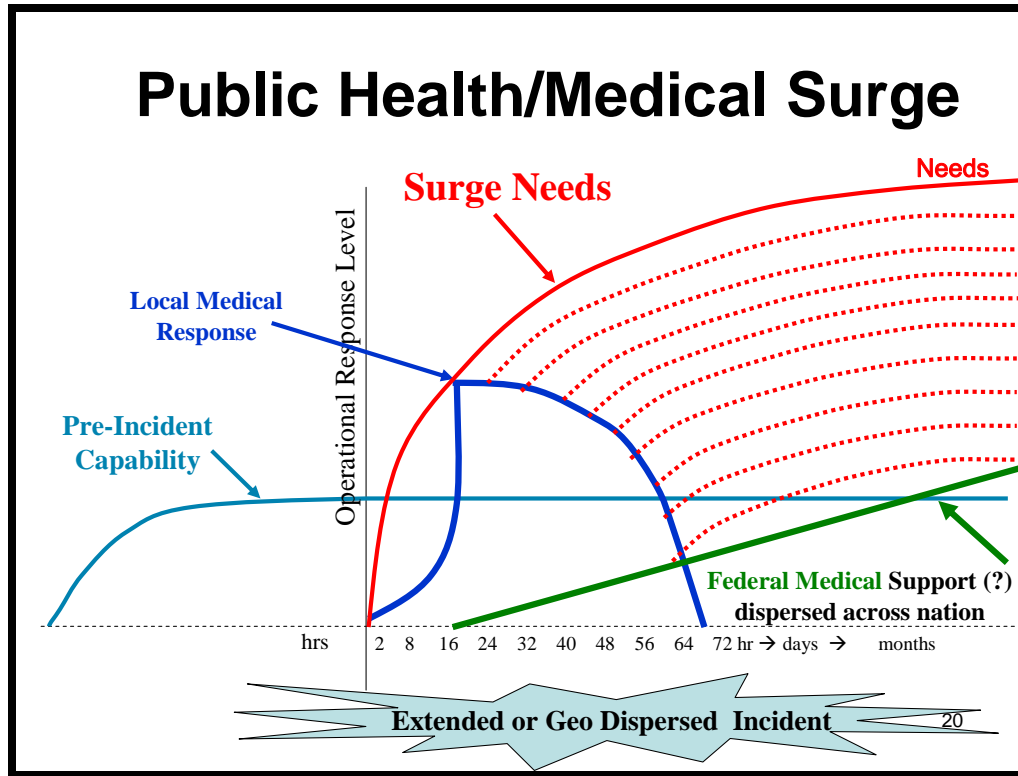


Figure 2. Public Health/Medical Surge in a Geospatially Dispersed Incident (After: Barbisch, 2006, the SBCCOM Bio Warfare Improved Response Program)

The *National Preparedness Guidelines* (DHS, 2007a, p. 12) emphasize the vital nature of regional identification and coordination in order to enhance synchronization efforts by federal, state, local, tribal, and territorial entities with one another, the private sector, nongovernmental organizations, and individual citizens. The *Guidelines* advocate formal arrangements among geographic regions to provide the following benefits: better coordination of preparedness activities; economies of scale in terms of spreading cost, pooling resources, and disbursing risk; and increasing the overall return on preparedness investment. To date, there is not a widely accepted vehicle for regional planning and integration of jurisdictional planning. Yet, it is precisely at the regional level of response

that local jurisdictions gain a capability to move horizontally across public and private organizations and can most adeptly provide sustainability beyond those first 36 local medical response hours to fill the impending public health and medical surge when the state and federal government cannot be everywhere at once (Inglesby, 2006).

Regional organization is gaining hold as the jurisdictional response of choice for certain types of disaster. For example, the Emergency Management Accreditation Program (EMAP) is a nationally recognized emergency management standard and accreditation program which has laid groundwork for assessing a region's emergency management capabilities. The existing 58 EMAP standards are reported to be: "scalable and apply to emergency management programs of any size; regions of varying sizes and composition are no exception (EMAP, 2006, pp. 3-4)."

Project Public Health Ready (PPHR), a project of the National Association of City and County Health Departments (NACCHO) and the CDC, recently published a planning guide to address regional planning development (NACCHO, 2007). The document's stated purpose is (NACCHO, 2007, p. 6):

- The development of a common vision in order to reduce the daunting initial complexity
- The development of a planning process using PPHR as a planning framework
- The provision of practical tips, tools, and resources from PPHR regional sites
- A description of possible outcomes and obstacles that can be expected in developing regional readiness

The document goes on to lay out a three-phase, 11-step plan for the creation of a regional approach to disaster that provides the stability to achieve capability in terms of prevent, protect, respond and recover. It also provides descriptions and examples of different collaboration models to include networking, coordinating, standardizing, and centralizing (NACCHO, 2007, p. 12).

2. Current Ohio Regional Disaster Planning

There are 30 regional coordinators for public health and medical response in Ohio. These individuals serve across eight homeland security (HLS) regions to coordinate the: 1) public health system; 2) Metropolitan Medical Response System; 3) Regional Medical Response System (RMRS); and 4) hospitals. The regional coordinators are funded by the Centers for Disease Control and Prevention (CDC) Cooperative Agreement with the Ohio Department of Health. The positions were aligned with the HLS regions in 2002 when the initial cooperative agreement was released. The regional coordinators work out of a local health department within their respective HLS region. The formal oversight via the state health department for regional coordination comes through quarterly meetings and written reporting in conjunction with cooperative agreement requirements.

There are no state standards for regional planning and coordination processes or products. This regional planning level of coordination does not have any formal authority, as the coordinators actually work for a loosely knit committee of agency leaders (public health and hospital) that likewise have no authority outside of their county/city agency and hospital system boundaries. The regional coordinators constantly work to align up to thirty different county/city plans across three different entities (health departments, hospitals, and regional-metro medical systems) while striving to align their annex templates ultimately with their respective emergency management all-hazards plans. Next, they try to facilitate the development and staging of regional exercises. These large, functional exercises have a history of splintering into jurisdiction (only) response in the chaos of exercise play. Each county jurisdiction's planning product is sacred, with 88 different plans replicated across Ohio in an accepted template to include the medical/public health annex. This can certainly be compared to one intelligence expert's take on classified intelligence: "that processing within the stovepipes has been focused on the delivery of documents rather than making sense of all of the information in the aggregate (Steele, 2007, p. 142)."

A recent Association of Ohio Health Commissioners (AOHC) news item does call for an investigative approach to regional roles in disaster planning:

And what role for the Regions? Despite considerable variations in size and dynamical differences between Regions, they may be an efficient vehicle to assume a greater role for meeting target capabilities. With no legal authority, can the Regions play more of a direct role in funding allocations and strategic organization of preparedness activities within the Regions? Currently there is a joint AOHC/ODH Regional Planning Task Group reviewing planning and service delivery options...(G. Nixon, January 11, 2008)

Ohio does not currently have regional planning incentives nor mandates for public health service delivery built into normal, day-to-day operations. NACCHO has also published a study whereby the organization recommends regionalization of public health services apart from disasters as an answer to some of the current public health funding issues and as a solution to more manageable accreditation compliance for the public health infrastructure and its service provision (Bernett, 2007, p. 2).

3. Regional Jurisdiction Summary

While custom may dictate that all disaster response is local, a catastrophic incident like pandemic influenza creates the potential for overwhelming mass casualty and fatality, along with an overwhelming need for a sustained operational surge that could last for months. Indeed, there has been a clarion call for response capacity built on regional capabilities and across local boundaries since Hurricane Katrina, considered a catastrophic natural disaster and occurring across wide enough swaths that local surge response was ineffective almost immediately. Regional planning remains mostly an uninvited and untried concept, however, in the current vertical emergency management system of the United States. Obstacles associated with regional efforts usually are related to current jurisdictional realities (e.g., home rule), as well as turf disagreements at the local and state levels.

During the past two years, operational guidance from well-recognized organizations in emergency management and public health has called for regional planning operations in disaster. The regionalization efforts in preparedness coincide with

parallel efforts in regionalization of general public health service provision. Mass fatality management related to a pandemic influenza incident lends itself to regional planning in terms of resources, staff, and system integration and economy of scale.

F. COMMUNITY CONFIDENCE AND TRUST: BUILDING RESILIENCY

One of the most demoralizing things was the inability to move bodies out of the home.

- John M. Barry, The Great Influenza

1. The Community Trust and Resiliency Linkage

Current pandemic influenza planning relies heavily on pharmaceutical solutions, namely the distribution of antivirals and vaccines to pre-identified population sectors. This approach remains entrenched even after the CDC 2007 release of community strategies for nonpharmaceutical PI control. Members of the scientific and public health community (Center for Biosecurity, 2008), however, are raising questions around these medical solutions in terms of strategic appropriateness (e.g., the effectiveness of antiviral prophylactic use versus antiviral use in early treatment of disease), as well as availability realities (e.g., it is unlikely that the appropriate vaccine will be available for at least six months and even then, only in limited quantities). A recent thesis published through the Center for Homeland Defense and Security recommends a community policing strategy alternative to bolster population action for life safety and voluntary compliance nonpharmaceutical intervention. Alben's (2007, p. 68) premise is that by preparing the communities for the worst (i.e., availability of only nonpharmaceutical interventions such as social distancing, proper hygiene, and adjusting the personal living environment for self-sustainment during certain time segments in PI), governmental and health leaders will realistically assist the community to prepare and participate actively in saving lives. The community policing conceptual model is promoted to build trust between the population and governmental authorities during a pandemic crisis that occurs without the traditional magic bullet: oral medicines medicine or vaccines. A disease capable of mortality without an immediate cure or prevention, however, obviously produces death. How might dead bodies gathering in the community at homes and in morgues impact the

community's trust in its government and leaders? This question is especially cogent pertaining to a public that has been consistently assured that DMORT is just around the planning corner, and that funeral services will, of course, be delivered with the utmost in cultural diversity.

In the fall of 2007, Homeland Security Presidential Directive 21 (HSPD-21) established a National Strategy for Public Health and Medical Preparedness Strategy to guide the transformation of the nation's approach to protecting the health of the American people against all disasters. HSPD-21 defines a catastrophic health event as "any natural or manmade incident, including terrorism that results in a number of ill or injured persons sufficient to overwhelm the capabilities of immediate local and regional emergency response and health care systems (The White House, 2007a, p. 1)." The directive represents a formal governmental push for community resiliency. Retired U.S. Coast Guard Commander, Stephen E. Flynn, argues that although resiliency was once a well-known hallmark in U.S. communities, a current climate of fear and sense of powerlessness is eating away at national resiliency (2008, p. 2). He insists that America must be re-armed with the confidence and subsequent capability to face disaster that arrives in any form, natural or manmade. He believes that national resiliency will be achieved through individuals and communities by (2008, pp. 6-7):

- a robustness to stand and operate in the face of disaster
- a resourcefulness to manage once the disaster unfolds
- an ability to quickly get back to normal post-disaster
- a pragmatic ability to absorb and act on lessons learned

The population must trust its community leaders and engage in the policy and planning process to build resiliency in the face of disaster. In turn, community leaders must trust the stakeholders and their organizational ability to take calculated risks in order to create strength, flexibility, creativity, and collaboration. Trust building is an iterative process, a process that progresses with the usual friction of a meaningful relationship. Reina and Reina (2007, p. 36) of The Reina Trust Building Institute, Inc., argue that the building and breaking of trust is a normal cycle in all relationships. They

propose a transactional model for trust involving contractual agreement, communication, and competence. Their template for community trust building includes a return map for violations of trust occurring in the past.

In defining successful leadership during a bioterrorism attack, The Working Group on Government Dilemmas in Bioterrorism Response advocates the defense of civil liberties, preservation of economic stability, avoidance of scapegoating, and bolstering community resiliency, in addition to limiting death and suffering (The Working Group on Governance Dilemmas in Bioterrorism Response, 2004, p. 26). Trust between leaders and their communities is at the crux of this effective relationship.

The civic infrastructure's capacities to help remedy an extreme event include the social circuitry to energize trust between authorities and publics, multiple communication channels to reach diverse populations, practical support for professional responders, self-organized solutions in seeming chaos, and a grounded commitment to recovery (Schoch-Spana et al., 2007, p. 1)

The literature reveals, also, that involving the public is not just about what the community receives, but is just as much about what the public can give. In MFM, death surge will quickly outpace the ability of professional practitioners to address the push, especially when their primary efforts will be taken up with the needs of the living. A resilient and trusting public, a community that has been previously engaged, will become an invaluable asset in response and recovery. Community level methods to cope with mass fatality can "benefit immensely from the community residents' counsel and assistance in relation to the practical, cultural, religious, and psychological dimensions of death (Schoch-Spana et al., 2007, p. 21)."

Schoch-Spana argues that the civic infrastructure must be involved in emergency planning and poised to act before, during, and after an event. She states that the community members who interact regularly can "help officials decide in advance who gets scarce medical resources, give aid when the professionals cannot be there, comfort survivors over time, and set priorities for recovery and restoration (2008, p. 3)."

2. Public Engagement

One of the problems with pandemic influenza planning to date, though, is that public health has not incorporated the true public engagement as a core intervention for disaster planning or planning for population health in general (Schoch-Spana et al., 2007, p. 9). Mass fatality management across the nation is a pending policy choice with multiple decisions yet to be made related to pandemic influenza planning. MFM decisions require technical knowledge and information, as well as an ability to weigh competing societal values. For this reason, it is vital that the public become a part of these policy decisions to energize trust between authorities and the public.

Public participation in emergency planning provides ready access to “citizens’ wisdom”—lessons distilled from the life experiences of many and diverse people—on how best to tackle serious, unforeseen events. Community partners can query plans: Do they reflect community sensibilities and priorities? Are they going to work logistically? Do they meet the needs of all people or leave certain groups out? How can we remedy that? (Schoch-Spana et al., 2007, 17)

The Public Engagement Project on Community Control Measures for Pandemic Influenza was implemented and evaluated in the fall of 2006, sponsored by the Association of State and Territorial Health Officials (ASTHO) and facilitated by The Keystone Center (The Keystone Center, 2007). The project sponsored public deliberations involving national stakeholders and citizens at-large on the topic of non-pharmaceutical measures and PI response. Community members participated in education regarding basic facts around PI and subsequent implications for planning prior to starting into the facilitated discussion. The public was then engaged in dialogue and policy thought as to what nonpharmaceutical measures should be implemented early on to slow disease spread, yet maintain a viable local economy and community cohesion. Goals for the project included: attracting a diverse group of citizens and stakeholders, understanding participant motivation to attend such a forum and to engage, provision of information for sufficient knowledge on the part of the public prior to dialogue, assurance

of a balanced process representing a diversity of views, and assurance that participant effort would be incorporated in subsequent decision making surrounding PI policy and guidance (The Keystone Center, 2007, p. 6).

The Public Engagement Project on Community Control Measures for Pandemic Influenza served as a trust-building exercise for the citizens who participated. The report's summary indicates that increased use of such participatory and transparent group process mechanisms are needed to assure reality based planning to slow the spread of PI (The Keystone Center, 2007, p. 20). It only makes sense, then, that such a vehicle could also lend sound methodology to another real aspect of PI: death surge.

3. Trust and Resiliency Summary

Mutual trust between citizens-government, stakeholders-leaders, and communities-authorities is an important link in tapping into community resiliency across the nation. Engaging the population in public health policy and guidance regarding nonpharmaceutical interventions in PI is a pressing issue, increasingly captured in the literature surrounding PI solutions in planning. Although a public engagement model has been developed, implemented, and evaluated for such forums, it is still not being regularly used to enable communities to make the hard decisions and to take the necessary actions required for preparedness, response, and recovery in pandemic surge. Mass fatality management is another area of consideration under PI planning that would benefit from the use of public engagement strategies. The building of trust for communities among governmental leaders, stakeholders, and citizens-at-large has the ability to strengthen population resiliency.

G. LITERATURE REVIEW SUMMARY

The specter of PI compels local communities and their death care infrastructure to figure out a realistic plan for the body disposition, family assistance, and mass fatality capability. This type of non-scene based mass fatality planning has not been addressed with actionable plans for the most part. Communities and their disaster planning teams

are, understandably, pre-disposed to deal with saving lives versus dealing with death. Even when attention is turned to MFM, mass fatality is calculated in terms of the traditional hundreds with the availability of external partnering and resources.

When addressing pandemic influenza and mass fatality management, the available published literature is cursory at best. Although a call for MFM planning appears as valued and absolutely appropriate at the national and state levels, a lack of appropriate strategic and operational guidance with actionable recommendations begs the question of how subsequent planning is to be addressed at the regional and local levels. It is at the regional level, in horizontally aligned interactions, that capability building must take place for MFM. There are no national planning standards for MFM operations apart from conference recommendations published in a series of white papers in 2006. In spite of this lack of standards, the federal government is mandating that states submit MFM plans as a part of their pandemic planning efforts. In turn, states are demanding the same of their local jurisdictions.

The fact remains that one of the difficulties surrounding MFM is a broader society and a health care system that do not necessarily want to talk about or operationally plan for death in pandemic and catastrophic surge. The National Response Framework and Guidelines are all about saving lives. This strong concern for life safety and treating the living seems to suppress the need to address the operational and tactical realities of dealing with dead bodies and the significant others affected by this loss. There is a resulting deficit to keep culturally diverse populations prepared, informed, and willfully ready to address population-based decisions related to MFM in disaster response. The same disaster planning groups that meet monthly to discuss medical surge are not as enthusiastic about regular meetings to discuss death surge resulting from pandemic influenza.

Community resiliency is a current thrust within national planning and current directives surrounding that planning. The government and the entire disaster response infrastructure cannot dare to think that they can achieve response success for a population of almost 300 million. There is no cavalry waiting in a mystical fort during an all-encompassing pandemic. The threat of PI and its ability to produce concurrent infection

and sustained waves of disease negates the capability of a traditional vertical response. Community resiliency, however, will not occur without trust among community leaders, stakeholders, and citizens-at-large. One recent mechanism that is being promoted for hard public health decisions is public engagement. This public engagement, involving all players involved in the issue, is about building policy that is acceptable and integrating community wide awareness into operational planning for disaster response and recovery.

In the end, death estimates calculated through CDC *FluAid* software represent death chaos — chaos that the public health system is listed for by name as the primary agency lead. The loss of capability for mass fatality will equate with a public lack of confidence in governmental leadership and, perhaps, ultimately crush general public health efforts in all response areas if not sustained and controlled.

III. METHODOLOGY

As shown in the literature review, mass fatality management (MFM) planning for pandemic surge must take place at the regional level of jurisdictional effort to attain true MFM capability in a catastrophic incident. There is no strategic guidance or operational model for regional MFM planning in Ohio. The key stakeholders in MFM planning are without a forum to coordinate MFM preparedness and may be unaware of this deficit and its potential consequences. The following research questions guided the initial investigation into regional MFM during pandemic surge:

- What are the current gaps in Ohio's guidance for fatality management?
- What are the current gaps in fatality management operational capability at the local and regional levels?
- What is the current status of fatality management surge resources (e.g., staff, staff [equipment and supplies], systems) at the local and regional level?
- What are the legal, financial, and/or organizational barriers, if any, to Ohio's mass fatality management?

Based on these questions as well as the MFM preparedness shortfalls identified in the MFM literature review, a survey was developed to determine key stakeholder (health commissioner, county emergency management director, and county coroner) perceptions of agency/jurisdictional progress towards MFM planning within the State of Ohio.

The survey was designed to explore the awareness, identification, and knowledge of existing MFM guidance as well as participant identification of partners, confidence in existing planning efforts, and delineation of barriers to MFM operational capability at the local, regional, and state levels. Most importantly, the information derived from the survey analysis will assist Ohio's planners to determine a baseline for actionable regional planning for MFM.

The three target audiences were asked to complete separate but aligned surveys: *Regional Mass Fatality Management in Catastrophe Surge: City and County Health Commissioners*; *Regional Mass Fatality Management in Catastrophe Surge: County*

Emergency Managers; and Regional Mass Fatality Management in Catastrophe Surge: County Coroners. Copies of each of the three surveys and a combined survey version of each question by target audience and category are found in Appendix A.

A. SURVEY DESIGN AND DELIVERY

The Joint Task Force Civil Support Working Group on Mass Fatality determined that any planning effort for MFM should include the following seven areas for viability of response and recovery operations (Gursky, 2007, p. 4):

- Command and control
- Body identification
- Medico-legal investigation
- Morgue operations
- Funeral services
- Final disposition
- Family assistance and behavioral health services.

The literature review revealed no previously published surveys for MFM in catastrophic surge at the local, regional, state, or national level. Hence, the author developed the *Regional Mass Fatality Management in Catastrophe Surge Survey*. The survey's content was aligned with the seven areas above by clustering questions around each area, and the survey also incorporated content related to the four research questions presented earlier in this chapter.

The survey included 38 questions for Health Commissioners, 37 questions for County Emergency Management Directors, and 34 questions for County Coroners. Participants rated their confidence in their agency's or jurisdiction's ability to perform MFM operations in preparedness, response, and recovery (1 = Strongly disagree; 2 = disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree). They also identified MFM lead agents for coordination and operational command and control at local and state levels. After asking the respondents about resource availability, the survey invited participants to list bridges and barriers to MFM planning at their jurisdictional level. Next, the respondents described their familiarity with and access to

current Ohio MFM planning. A space for comments and five (5) demographic questions completed the survey to include the participant's identification with one of Ohio's eight homeland security regions.

Throughout the survey's development, the author worked to establish survey objectives with the statewide core planning group that was responsible for developing Ohio's Tab D to Emergency Support Function (ESF) 8: the *Acute Mass Fatalities Incident Response Plan* (OEMA, 2007c). At the time of the survey development, the core planning group was developing the *Non-Acute Mass Fatalities Incident Response Plan*, to be released in the fall of 2008 (OEMA, 2008).⁷ Ohio's core planning group for both the *Acute* and *Non-Acute Plans* included representatives from Ohio Emergency Management Association and Ohio Department of Health. The review of written drafts was completed through select providers and planners in local hospitals, health departments, emergency management agencies, mental health agencies, and the funeral directors association. The core planning group was instrumental in identifying the three target audience groups in Ohio for survey purposes, taking the Ohio Revised Code, national planning documents, and the state's ESF 8 into account.

The *Regional Mass Fatality Management in Catastrophe Surge Survey* was reviewed by Ohio's MFM core planning group and then released to each target audience through its respective professional organization. The author personally approached all organizational directors and enlisted their help, and these individuals, in turn, reached out to their membership.⁸ Select members and volunteers from each professional organization (Association of Ohio Health Commissioners, Emergency Management Association of Ohio, and the Ohio State Coroners Association) were asked to review and pilot the survey tool prior to its general release. Each pilot participant not only completed the survey, but also provided written or verbal comments to tighten the language, clarify

⁷ By virtue of this study, the author had the opportunity to join the mass fatality planning cell part way through the writing of the *Non-Acute Mass Fatalities Incident Response Plan*. Areas from the NORTHCOM-DHHS led Mass Fatality Working Group were incorporated into the final draft, released for state agency and select health provider review in April 2008.

⁸ Beth E. Bickford, Executive Director, Association of Ohio Health Commissioners; Thomas Kelley, Director, Emergency Management Association of Ohio; and David P. Corey, Executive Director, Ohio State Coroners Association.

question intent, and gauge the ease of participant understanding. Finally, the survey was distributed throughout the Office of Workforce Development in the College of Public Health at the Ohio State University for a final pilot with a non-targeted population of public health workforce staff to determine question clarity and to garner final edits. The survey went through three revisions prior to its general release to the target audiences.

The internet survey was fielded through *SurveyMonkey* using its List Management Tool (The SurveyMonkey Team, 2008). In a closed population of working individuals, an internet survey presents a relatively low cost process that can be conducted in a shortened timeframe if there is a complete list of email addresses and the survey is perceived as work-related (Schonlau, Fricker, and Elliott, 2002, p. 75). Both of these factors applied to the target audiences. Publicly available email addresses for each of the participants was obtained through their respective state agency (Ohio Department of Health and Ohio Emergency Management Agency) and/or their professional organization (Ohio State Coroners Association). Marketing for survey awareness and invitations for participation was accomplished through organizational and disaster preparedness newsletters, postings on various web sites, targeted presentations at various meetings, and word of mouth. An email link took participants directly to the survey website. Their responses were completely confidential and could not be tracked as the respondent IP addresses and email addresses were blocked in *SurveyMonkey* to ensure anonymity.

An initial email announcing the survey was sent to all recipients one week prior to fielding the survey. This announcement enabled a final opportunity for participant awareness and also served as a test run for each of the participant's email addresses via bounce back messages. Final corrections to the email bounce backs were made via phone contact with the respective agency or organization of the potential participant. Once the survey was sent to the participants, three reminder emails followed at seven days, at 14 days, and two days before the survey tool's website closed on day 19. Examples of the announcement and reminder emails are found in Appendix A.

The data were entered into a SPSS-PC database for descriptive and inferential statistical analysis within, between, and among the target audience groups. The research process was approved as exempt under Category 2 on December 28, 2007, by The Ohio State University Institutional Review Board (IRB), Protocol #207E0871.

B. TARGET AUDIENCE

The Regional MFM Catastrophe Surge Survey targeted the three lead groups involved in MFM under Ohio Revised Code, state planning documents, and existing national guidance. The survey was designed to gather information as well as raise MFM awareness in the target audiences to include county coroners, county emergency management directors, and city and county health commissioners. The sample frame covered the entire population of each group, creating an ideal sampling situation in terms of probability and, ultimately, for generalizing the results (Schonlau et al., 2002, p. 5).

There are 88 coroners in Ohio, one per county. County coroners in Ohio include licensed physicians who investigate sudden and/or suspicious deaths and perform autopsies in connection with the deaths as well as licensed physicians who investigate such deaths but who do not perform autopsies (Ohio State Coroners Association, 2005). The coroner is elected on a quadrennial basis with jurisdictional oversight within the county's border (ORC 313.01). Although county coroners are responsible for the investigation of death during sudden and/or suspicious circumstances, their investigative role would not extend to every death in PI once pandemic causation was established. The county coroner would still play a primary role in MFM as the official custodian of the morgue (ORC 313.08). In addition, the coroner is ultimately responsible for death certification should there be no attending physician (ORC 3705.16).

There are 88 Ohio county emergency management directors, each appointed by the county commissioners and the chief executive of all or a majority of the other political subdivisions within the county (ORC 5502.26). The emergency management director serves at the will of his or her appointing body, some entering contractual agreements with the county commissioners and chief executives of the political subdivisions. The Ohio Emergency Management Agency and the county emergency

management agencies are responsible for coordination functions in disaster and this function is established in the Ohio Revised Code, Chapter 5502: “the Ohio Emergency Management Agency is the central point of coordination within the state for response and recovery to disasters (Ohio Department of Public Safety, 2005).” Emphasis on the MFM response and recovery role for this target audience is on coordination, not on command and control or lead agent status.

There were 132 health commissioners in Ohio, both city and county, at the time of the survey’s distribution. Ohio’s public health system is divided into health districts that can be city, county (a combination of villages and townships into a general health district), or combinations thereof (ORC 3709.01). A board of health governs each health district, with each board member appointed to a service term by a district advisory council, city’s chief executive officer, or a combination thereof. The board of health, in turn, is required to appoint a qualified health commissioner as the executive officer of the district (ORC 3709.11, 3709.14). The health commissioner must execute the board of health orders and state health department administrative code to include the enforcement of sanitary regulations and keeping the public informed in regard to all matters affecting the health of the district. Public health is identified as Ohio’s primary agency and lead for MFM in ESF 8 (OEMA 2007a, p. 8~1; 2007b, p. 8~35; 2007c, p. 8~79).

C. SUMMARY

The *Regional Mass Fatality Management in Catastrophe Surge Survey* was developed as an internet survey and delivered as a web-based product through *SurveyMonkey*. Due to the nature of the closed sampling frame (i.e., the total population of all three target groups was known along with each member’s publicly available email address), the internet survey presented a relatively low cost and timely way to research baseline information about MFM gaps and operational understanding in Ohio. The survey, piloted and revised in a three-step process, was fielded over a period of 19 days with weekly email reminders following an initial invitation. The survey closed three days after a final email notice was sent to all participants. This last notice included the response rates from each of the eight HLS regions in Ohio for competitive motivation.

The target population included 88 county coroners, 88 county emergency management directors, and 132 city and county health commissioners. All of the surveys and samples of the email communications with the potential participants are found in Appendix A.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. RESULTS AND ANALYSIS

The survey results from each of three target audiences are presented in this chapter using response and data points from each of the three surveys: *Regional Mass Fatality Management in Catastrophe Surge: County Coroners*; *Regional Mass Fatality Management in Catastrophe Surge: County Emergency Managers*; and *Regional Mass Fatality Management in Catastrophe Surge: City and County Health Commissioners*. Copies of the surveys and a combined survey version of each question by target audience and question category are found in Appendix A. The survey results for each group were obtained directly from *SurveyMonkey*. The internet-based *SurveyMonkey* allows the researcher to analyze the survey results directly from a response summary page, viewing data for each question to include total response counts, percentages, respondent count, and response averages (The SurveyMonkey Team, 2008, p. 74). Questions tagged for additional analysis were then imported into a SPSS-PC database for inferential statistical analysis between and among respondent groups. Supplemental information related to the data results and analysis is found in Appendix B, referenced throughout this chapter. The data analysis is considered with implications for MFM planning, response, and recovery towards the end of this chapter.

A. RESULTS

The survey included 38 questions for health commissioners, 37 questions for county emergency management directors, and 34 questions for county coroners. The sample frame covered the entire population of each group, creating an ideal sampling situation in terms of probability (Schonlau et al., 2002, p. 5). The targeted population totaled 308 across the three audience sectors, and the total response rate for the *Regional Mass Fatality Management in Catastrophe Surge Survey* was 45% (n=137). The narrative summary of the results for each group are found in the chapter sections that follow, along with accompanying displays of select target group survey responses in Appendix B.

1. County Coroners

a. Response Rate and Demographics

There are 88 coroners in Ohio, one per county. The coroner is elected on a quadrennial basis with jurisdictional oversight within the county's border (ORC 313.01). Thirty county coroners completed the survey, with a response rate of 34% across Ohio. Most responding coroners (59%) have been in their positions over 10 years with 21% serving over 21 years. By law, the county coroner in Ohio is a physician. There were no county coroners responding from three homeland security (HLS) regions: West Central and Southeast 1 and 2.

Select detailed responses to survey questions covered in this narrative section are found in Appendix B under *Select County Coroner Responses*, "Demographics, Questions 27-34."

b. General Awareness, Command-Control (C2), and Coordination

The majority of county coroners (53%) state that they are the lead agent for coordination of MFM in their jurisdictions (i.e., counties) and 57% of coroners believe that at least some level of regional planning is occurring. They identify public health, emergency management, and funeral directors as the main partners who should be involved in MFM within the jurisdiction, but do not believe that funeral directors are as involved as they should be. When asked regarding the lead agent for command and control (C2) of MFM during an incident affecting their jurisdiction, 33% believe that Unified Command with multiple leads is appropriate while 27% identify the county coroner and 23% identify emergency management as the C2 lead. When it comes to coordination of MFM efforts, 53% of the county coroners identify emergency management as the lead agent, while 23% identify the coordination point within public health. Another 23% believe that MFM coordination is a county coroner function.

County coroners are overwhelmingly confident (86%) about their ability to work with their identified jurisdictional partners (public health, emergency

management, and funeral directors). There is confusion in their ranks about whether a mass fatality related to Pandemic Influenza should be considered a coroner's case. Over half of them (53%) are aware of the state's release of a traditional MFM planning document, but fewer (37%) believe that the current state guidance is going to help them in PI. In fact, the county coroners are divided as to whether the state partners are really capable of working together to accomplish the needed MFM guidance.

Select detailed responses to survey questions covered in this narrative section are found in Appendix B under *Select Coroner Responses*, "General Awareness, Command-Control, and Coordination, Questions 1-14."

c. Current MFM Planning and Operations

As many county coroners disagree (42%) as agree (42%) that their jurisdictions have pre-identified community collection points for bodies and possess morgues meeting temperature requirements for storage of the bodies. A further analysis reveals that there is no HLS region differences in the responses (i.e., the disagreement/agreement is within each of the regions as opposed to being affected by the coroners' identified HLS region.) The same trend of a divided response shows up in the coroners' confidence that volunteers are currently trained and organized to help and support MFM efforts and jurisdictional plans to augment existing morgue space. Forty percent (40%) of the county coroners disagree that volunteers for surge response are present and another 43% agree that they are, again, with no HLS regional differentiation. Thirty-seven (37%) of the coroners disagree that their jurisdiction has augmentation plans and 37% agree, the divide unaffected by HLS regional identification.

The majority of coroners do not believe that they have access to critical resources for MFM. The only MFM resource options that the majority of county coroners identify as currently accessible are the labor pool and transportation; they deem access to all other resources (supplies, personal protective equipment [PPE], vaccines, fuel, raw materials, communication bandwidth, and security) as questionable or not currently available. They identify a lack of resources related to the stockpiling of critical supplies as well as gaining access to prioritized resources (e.g., water, generators, and

gasoline). For example, 51 % of coroners disagree and another 17% are neutral that they have even a 10-day supply of critical supply stockpiles to support MFM operations. They are not confident in the existing communication lines and authority at the local, regional, and state levels for response once the death surge occurs, but are more confident (67%) in their jurisdiction's leaders and public information officers' ability to deliver honest and timely information to the community.

Select detailed responses to survey questions covered in this narrative section are found in Appendix B under *Select Coroner Responses*, "Current MFM Planning and Operations, Questions 15-26."

d. Perception of Operational Strengths, Weaknesses, and Barriers

The county coroners were asked to provide answers to two narrative statements towards the end of the survey: "The best thing my jurisdiction has going in terms of MFM is ___" and "The thing that worries me the most in terms of MFM is ___." In response to the first statement, 54% of the county coroners identify existing partnerships as the best thing in their jurisdiction. Many of those responding favorably to the existing jurisdictional partnerships maintain that their small, tight-knit communities enhance their ability to work together. The second "best" category identified (33%) is the jurisdictional (county) pre-planning that has already been accomplished.

On the flip side of the coin, 54% of county coroners list a lack of resources, including PPE, body bags, identified leaders, limited manpower, and morgue space, as their biggest worry. A lack of planning is identified as a second-place worry (33%) by the coroners, the same percentage identifying it as a strength.

When asked about barriers to a successful MFM in the jurisdiction, most county coroners identify financial barriers (69%) and specifically indicate that their inability to stockpile even ten days of supplies is due to their current budgets. Ironically, the same "small community" relationship identified as a strength earlier is named as a fiscal liability in the barrier section. One coroner concludes by stating: "I am not sure that all parties have come to adequate conclusions over multiple areas of the MFM -

some have been addressed, others we have not been able to get everyone together to discuss overall. A STATE RUN [sic] organizational symposium involving each county and their respective ‘bosses’ would be great.” This was an Anonymous County Coroner Respondent, (2008), *Regional mass fatality management in catastrophe surge: County coroners, Regional mass fatality management in catastrophe surge survey*, Columbus, Ohio: The Ohio State University, Question 29.

Select detailed responses to survey questions covered in this narrative section are found in Appendix B under *Select Coroner Responses*, “Perceptions of Operational Strengths, Weaknesses and Barriers, Questions 27-29.”

2. County Emergency Management Directors

a. Response Rate and Demographics

There are 88 Ohio county emergency management directors, each appointed by the county commissioners and the chief executive of all or a majority of the other political subdivisions within the county (ORC 5502.26). Forty (40) emergency management directors completed the survey equating with a response rate of 46% across the state. Most responding emergency management directors (64%) have been in their positions less than 10 years with 33% serving less than five (5) years. Most directors are middle-aged adults: 89% between the ages of 36-65 years of age. When asked about their professional identity, 97% of the respondents chose “emergency management,” emphasizing the fact that emergency management is recognized as a professional discipline in and of itself. This is an especially interesting response in that this option was not provided in the survey and the respondents had to write in this response. No county emergency management directors responded from the Northeast HLS Region.

Select detailed responses to survey questions covered in this narrative section are found in Appendix B under *Select Emergency Management Responses*, “Demographics, Questions 34-38.”

b. General Awareness, Command-Control (C2), and Coordination

Emergency management directors at the county level are not sure about their agency's role in leading MFM coordination. While 33% believe that they are not the lead agency for coordinating MFM in their jurisdictions (i.e., counties), another 30% neither agree nor disagree, and 18% believe that emergency management is the lead coordinator. The majority of emergency management directors do believe that some level of regional planning is occurring (54%). They identify public health, funeral directors, county coroners, and mental health as the main partners who should be involved in MFM within the jurisdiction, along with the Emergency Medical System (EMS) and the American Red Cross (ARC) by their written response option. They do not believe, though, that funeral directors, county coroners, and mental health are as involved in MFM as they should be. When asked regarding the lead agent for command and control (C2) of MFM during an incident affecting their jurisdiction, 45% believe that Unified Command with multiple leads is appropriate, while 37% identify the county coroner as the C2 lead. When it comes to *coordination* of MFM efforts, 41% of the emergency management directors also identify county coroners as the lead agent. Another 30% identify the coordination point within public health and 27% within their own emergency management area.

Emergency management directors are very confident (90%) about their ability to work with their jurisdictional partners to achieve MFM capability. Over half of them (58%) are aware of the state's release of a traditional MFM planning document. Fewer (34%) believe that the current state guidance is going to be any help to them in PI. Apart from the lead agency status for C2 and/or coordination at the local jurisdictional level, 52% believe that the Ohio Department of Health is the lead agency for MFM coordination at the state level. Emergency management directors are not confident (61%) that the state partners can work together to accomplish MFM guidance and planning.

Select detailed responses to survey questions covered in this narrative section are found in Appendix B under *Select Emergency Management Responses*, "General Awareness, Command-Control, and Coordination, Questions 1-14."

c. Current MFM Planning and Operations

Emergency management directors express confidence in their agency's ability to assist the funeral industry to obtain the resources that it needs to conduct MFM. The only resource that the majority of directors identify as beyond their ability to attain is the vaccine supply. All other resources (labor, supplies, personal protective equipment [PPE], fuel, raw materials, communication bandwidth, transportation, and security) are viewed as attainable through emergency management access. The emergency management directors are also confident (76%) that uniform procedures have been established to request critical assistance from the state to expedite operations. The directors disagree, however, that their respective jurisdictions have established viable plans to augment morgue space (58%), with 21% not knowing whether the task has been accomplished.

When it comes to accessing current stockpiles of critical MFM supplies or pre-identifying temporary mass burial sites and cremation arrangements for death surge, emergency management directors do not believe that their jurisdiction has addressed planning for these critical elements of MFM. That is, their previous confidence regarding access to MFM resources does equate with confidence in sustaining the supply flow beyond the first 72 hours, the point at which the traditional jurisdictional response capability counts on state and federal assets for assistance. Fifty-three (53%) of directors disagree that they have access to a stockpile of critical supplies to support MFM operations for even 10 days. Fifty-five percent (55%) do not believe that their jurisdiction has pre-identified temporary burial sites or alternate cremation operations and another 26% cannot say one way or the other whether this has occurred. Neither are they confident that the existing lines of communication and authority at the local, regional, and state levels will provide the best possible outcomes in death surge. The emergency management directors are confident (55%) in their jurisdiction's leaders and public information officers' ability to deliver honest and timely information to the community before, during, and after the incident.

Forty-five percent (45%) of emergency management directors identify the Citizen's Corps as a viable source of volunteers for MFM operations. In contrast to that group of volunteers, however, most directors (58%) do not believe that the Medical Reserve Corps (MRC) will provide assistance for MFM. Comments given in conjunction with the MRC question indicate that this group will most likely be dealing with the life safety issues and not with dead bodies. The emergency managers in their comments do not propose the idea of MRC participation in family assistance activities. While there is agreement that their respective jurisdiction has collected and prepared public information and educational messages related to MFM that will help families (53%), the ability to provide family support centers in the middle of pandemic influenza is less assured, with 29% in disagreement and 40% unable to determine whether there is capacity or not (neither agree or disagree.) The jury also remains out on the jurisdictional ability to provide MFM family assistance to special populations (e.g., those with mental or behavioral illnesses or disabilities.)

Select detailed responses to survey questions covered in this narrative section are found in Appendix B under *Select Emergency Management Responses*, "Current MFM Planning and Operations, Questions 15-30."

d. Perception of Operational Strengths, Weaknesses, and Barriers

Like the county coroners, emergency management directors were given the opportunity to turn to narrative responses and big picture views just prior to concluding the survey. They responded to the same two statements: "The best thing my jurisdiction has going in terms of MFM is ___" and "The thing that worries me the most in terms of MFM is ___." In response to the first statement, 68% of the emergency management directors identify their existing jurisdictional partners as a major strength. Twenty-nine (29%) also identify jurisdictional pre-planning for MFM as a strength.

The majority (54%) of emergency management directors identify general infrastructure capacity for MFM at the county level as their major worry in MFM. One director states: "Apathy! I cannot get the Coroner or the Funeral Homes to come to the table to talk. The county health department is great and has been attempting to play catch-

up. [They are] the lead in some areas? [Sic]" This was an Anonymous Emergency Management Director Respondent, 2008, Regional mass fatality management in catastrophe surge: Emergency management directors, *Regional mass fatality management in catastrophe surge survey*, Columbus, Ohio: The Ohio State University, Question 33.

Another lists this concern: "The loss of essential services and utilities and control will create anarchy and social upheaval." This was from an Anonymous Emergency Management Director Respondent, Question 33.

When listing additional worries, 43% of emergency managers name a lack of resources to include the availability of manpower, general stockpiles of supplies, and morgue space. That is, even though they are confident in their abilities to assist in obtaining initial resources for the MFM incident, their written comments indicate that the emergency management directors are not at all confident in the county's ability to sustain the needed flow of critical supplies for MFM capability in response and recovery.

When asked about barriers to a successful MFM in their county, most (69%) emergency management directors identify financial barriers, indicating that stockpiling supplies is unattainable given current dollars and competing interests involving the living during a pandemic. Many also indicate that their counties are in economically depressed areas to begin with.

One emergency management director asks: "Who's gonna pay?" and another states: "It always comes down to financials." This was from an Anonymous Emergency Management Director Respondent, Question 33.

Select detailed responses to survey questions covered in this narrative section are found in Appendix B under *Select Emergency Management Responses*, "Perceptions of Operational Strengths, Weaknesses and Barriers, Questions 31-33."

3. County and City Health Commissioners

a. Response Rate and Demographics

There were 132 health commissioners in Ohio, both city and county, at the time of the survey's fielding. Ohio's public health system is divided into health districts that can be city, county (a combination of villages and townships into a general health district), or combinations thereof (ORC 3709.01). Sixty-seven (67) health commissioners completed the survey, a response rate of 51%. Most responding health commissioners (66%) have been in their positions less than 10 years with 34% serving less than five (5) years. Most health commissioners are middle-aged adults with 97% between the ages of 36-65 years of age. Forty-six percent (46%) of health commissioners identified their jurisdiction as the county, 29% as a combined district, and 25% as a city. When asked about their professional identity, 50% of the respondents chose either "nurse" or "sanitarian" equally. Health commissioners responded from each of Ohio's HLS regions.

Select detailed responses to survey questions covered in this narrative section are found in Appendix B under *Select Health Commissioner Responses*, "Demographics, Questions 32-37."

b. General Awareness, Command-Control (C2), and Coordination

The health commissioner group does not believe that public health is the lead for MFM coordination in Ohio (57%). They strongly believe that MFM planning is occurring at the regional level (70%), with 51% of the respondents indicating that their agency has entered into Memorandums of Understanding (MOUs) for regional assistance. They identify public health, funeral directors, county coroners, and mental health as the main partners who should be involved in MFM within the jurisdiction, along with hospitals and faith-based organizations in their written response option for the question. Health commissioners do not believe, however, that funeral directors, county coroners, and mental health are as involved in MFM as they should be. When asked to identify the lead agent for command and control (C2) of MFM during an incident affecting their jurisdiction, 35% believe that Unified Command with multiple leads is

appropriate while 27% identify emergency management and 26% identify county coroners as the C2 lead. When it comes to *coordination* of MFM efforts, 43% of the health commissioners identify emergency management as the lead agency while 33% identify county coroners as the coordination point. Only 25% of health commissioners believe that they should be coordinating MFM efforts as the lead agency.

Health commissioners are extremely confident (82%) about their ability to work with their jurisdictional partners in Ohio to achieve MFM capability. The health commissioners (69%) are not sure whether mass fatalities related to PI would be considered coroner's cases or not. Over half of them (59%) are aware of the state's release of a traditional MFM planning document, but significantly fewer (27%) believe that the current state guidance is going to be any help to them in a pandemic incident. In contrast to identifying their agency as the jurisdictional lead agency for C2 and/or coordination, thirty-eight percent (38%) believe that the Ohio Department of Health is the lead agency for MFM coordination at the state level; another thirty-two percent (32%) identify the Ohio Emergency Management Agency in that role. Several health commissioners entered comments indicating their lack of knowledge regarding a state lead for MFM. Health commissioners are pessimistic (68%) about the state partners ability to work together to accomplish MFM guidance and planning.

Select detailed responses to survey questions covered in this narrative section are found in Appendix B under *Select Health Commissioner Responses*, "General Awareness, Command-Control, and Coordination, Questions 1-14."

c. Current MFM Planning and Operations

Health commissioners express confidence in public health's ability to assist the funeral industry to obtain the vaccine and communication bandwidth resources, but are not so confident about the availability of other resources such as fuel, raw materials, transportation, and security. There are other resource areas where the health commissioners are divided in terms of their assistance ability to include labor, general supplies, and personal protective equipment (PPE). The majority of health commissioners do not believe that their jurisdiction's volunteers are ready to support

MFM efforts (53%), yet they believe that the Medical Reserve Corps (MRC) could be a viable source to expand MFM expertise (55%). Most are confident in the jurisdictional agency's ability to process and track fatalities through the Electronic Death Registration System (EDRS) during MFM (53%).

Pre-identification of temporary mass burial sites or cremation arrangements for death surge is not believed to have been completed in their jurisdictions at this time, with only 27% of health commissioners agreeing that these arrangements have been made. They are not confident about the existing lines of communication and authority at the local, regional, and state levels achieving the best possible outcomes in death surge. Health commissioners are confident (56%) in their jurisdiction's leaders and public information officers' ability to deliver honest and timely information to the community before, during, and after the incident.

While there is agreement that their respective jurisdiction has collected and prepared public information and educational messages related to MFM that will help families (55%), the ability to provide family support centers in the middle of pandemic influenza is less assured, with 26% disagreeing that there is capability and 50% not willing or unable to say (neither agree or disagree.) Health commissioners are also not confident of a jurisdictional ability to provide MFM family assistance regarding special needs populations (e.g., those with mental or behavioral illnesses or disabilities.)

Select detailed responses to survey questions covered in this narrative section are found in Appendix B under *Select Health Commissioner Responses*, "Current MFM Planning and Operations, Questions 15-28."

d. Perception of Operational Strengths, Weaknesses, and Barriers

Like the county coroners and emergency management directors, health commissioners were given the opportunity to present big picture, narrative responses just prior to concluding the survey. They responded to the same two statements: "The best thing my jurisdiction has going in terms of MFM is ___" and "The thing that worries me the most in terms of MFM is ___." In response to the first statement, 69% of the health

commissioners identified the existing partners in their jurisdiction as a major MFM strength. There was no close-second strength named, although health commissioners also identified jurisdictional pre-planning and in-county MOUs as strengths.

Forty percent (40%) of the health commissioners identified general infrastructure capacity at the county level as their major worry in MFM. One health commissioner went as far as to say the following: “Public health has no business taking the lead in MFM. [Public health is] great for assisting with parts of the plan but public health does not have specialized mortuary care/services capabilities.” This was from an Anonymous Health Commissioner Respondent, (2008), *Regional mass fatality management in catastrophe surge: Health commissioners*, *Regional mass fatality management in catastrophe surge survey*, Columbus, Ohio: The Ohio State University, Question 31.

When voicing additional worries, 20% of health commissioners identified a lack of resources and another 20% identified a lack of state guidance. As one health commissioner states: “There are great discrepancies between MFM regional responses in Ohio. For this to be a strong response we need to work more collaboratively among regions and the state to coordinate this specific response. There is little guidance from the state regarding MFM response in terms of a pandemic.” This was from an Anonymous Health Commissioner Respondent, Question 31.

When asked about barriers to a successful MFM in the jurisdiction, the health commissioners equally identified both financial barriers (43%) and operational barriers (43%). Another fifteen percent (15%) listed legal barriers as their most serious concern. While health commissioners indicate that they are used to working within austere funding realities, they indicate that the recent decreases in preparedness funding at the county level leave them unprepared for a local MFM response. One health commissioner summarizes the situation: “Financial, Legal and Organizational. It all boils down to resources! We would be stressed at the local level to come up with the numbers of people necessary to handle any significant event.” This is from an Anonymous Health Commissioner Respondent, Question 31.

Select detailed responses to survey questions covered in this narrative section are found in Appendix B under *Select Health Commissioner Responses*, “Perceptions of Operational Strengths, Weaknesses and Barriers, Questions 29-31.”

B. ANALYSIS

The responses by individual group (county coroners, emergency management directors, and health commissioners) were comparatively analyzed using both descriptive and inferential techniques. For most of the inferential statistical analysis, the Kruskal-Wallis nonparametric technique was used given the ordinal data results with independent groups (Munro, 1997, p. 109). Data results were compared for the three groups on appropriate questions with the Kruskal-Wallis one-way analysis of variance (ANOVA), with the subjects converted into ranks and the analysis comparing the mean rank in each group. By and far, there were no indicators of significance through this analysis, accomplished through the SPSS-PC database. When examining the data results, the lack of significant differences between groups can be explained by two data trends. First, there is a general lack of agreement within the groups by response (i.e., differential responses within the groups, which scattered the ranked means of the ordinal data). Second, there is sameness in the agreement or disagreement data point response across groups when the responses are differentiated. The significant differences determined by the inferential analysis are detailed in the appropriate sections below. In addition, each data result section was analyzed across the groups using the descriptive data results to illuminate some directional implications for MFM “next steps.” Finally, written responses to open-ended survey questions were qualitatively analyzed using both a word count and word cloud approach.

1. Response Rate and Demographics

A select analysis of the demographic data by majority response across the surveys’ target audiences is found in Table 2. Most county coroners are physicians with numerous service years in their position. They are an older group, with almost one-fifth over sixty-five (65+) years of age. Their overall age combined with their years of

experience indicates stability in the county coroner ranks, even though the position is an elected one. In contrast, most emergency management directors and health commissioners have served in their appointed positions less than ten years, with half of that group serving less than five years. Even though the majority of both target groups fall into the same range of fifty-one to sixty-five (51-65) years of age, the emergency management directors and health commissioners are younger overall than the county coroners. It could be that the response rates to the internet-based survey reflect the age differential between the groups. That is, the lower county coroner response rate reflects a lower comfort level or desire to respond to email invites and internet based surveys that is age-related. The lack of response to the survey by target audiences in some of the HLS regions is not consistent across groups. That is, the non-response is not pervasive across any one HLS region when all of the three groups are taken into account. This lack of consistency combined with the healthy internet-based survey response rate overall (45%) and complete-population sampling frame bodes well for generalizing results across the State of Ohio.

DEMOGRAPHIC DATA BY MAJORITY RESPONSE	County Coroners	Emergency Management	Health Commissioners
Years in Position	> 10 Years (68%)	< 10 Years (64%) < 5 Years (33%)	< 10 Years (66%) < 5 Years (34%)
Professional Identification	Physician (100%)	Emergency Management (97%)	Nurse or Sanitarian (54%)
Age	51-65 Years (46%) 65+ Years (18%)	36-50 Years (41%) 51-65 Years (49%)	36-50 Years (43%) 51-65 Years (54%)
County, City, or Combined Status	County (100%)	County (100%)	County (46%) City (25%) Combined (29%)
Homeland Security Region	Northwest and Central (50%) Non-responding: West Central & Southeast 1&2	Central and Northeast Central (44%) Non-responding: Northeast	Northeast Central and Northwest (44%) Non-responding: N/A

Table 2. Analysis of Demographic Data by Majority Response across Target Audiences

2. General Awareness, Command-Control, and Coordination

A select analysis of the target audiences' perceptions regarding MFM command and control (C2) and coordination as well as general awareness of MFM planning (*Regional Mass Fatality Management in Catastrophe Surge Survey*, Questions 1-14) is found in Table 3.

GENERAL AWARENESS, C2 AND COORDINATION DATA	County Coroners	Emergency Management	Health Commissioners
My agency/office is the jurisdictional Lead Agent (Q1) for coordination	Agree/Strongly Agree (53%)	Agree/Strongly Agree (25%)	Agree/Strongly Agree (31%)
Lead agent/agency for C2 (Command and Control) (Q6) – Top three responses	Unified Command (33%) County Coroner (27%) Emergency Management (23%)	Unified Command (45%) County Coroner (37%) Public Health (11%)	Unified Command (35%) Emergency Management (27%) County Coroner (25%)
Lead agent/agency for Coordination (Q7) – Top three responses	Emergency Management (53%) County Coroner (23%) Public Health (23%)	County Coroner (41%) Public Health (30%) Emergency Management (27%)	Emergency Management (43%) County Coroner (33%) Public Health (25%)
Confidence in ability of existing State Plan to guide MFM response in jurisdiction (Q11)	Agree/Strongly Agree (37%)	Agree/Strongly Agree (34%)	Agree/Strongly Agree (27%)
Lead agency for MFM Coordination at the State Level (Q12) – Top two responses	Ohio Emergency Management Agency (OEMA) (57%) Ohio Department of Health (ODH) (27%)	ODH (52%) OEMA (23%)	ODH (38%) OEMA (32%)

Table 3. Analysis of Command and Control, Coordination, and Plan Awareness Data across Target Audiences

There is no agreement within or across groups regarding who is supposed to be the lead agent or agency for MFM C2. At the same time, no one group is really excited about taking charge. The county coroners believe that Unified Command is the way to go but they do indicate that they consider themselves a close second for ensuring C2.

Unified Command. In incidents involving multiple jurisdictions, a single jurisdiction with multiagency involvement, or multiple jurisdictions with multiagency involvement, unified command allows agencies with different legal, geographic, and functional authorities and responsibilities to work together effectively without affecting individual agency authority, responsibility, or accountability. (NIMS Online.com, 2004).

The emergency management directors and the health commissioners both like the idea of Unified Command, but most emergency managers believe that the county coroner is the C2 lead agent and health commissioners, the majority (> 90%) wanting no part as the lead in MFM, believe that emergency management is the lead. This, of course, presents an issue. Emergency management is not tasked with command and control functions under the National Incident Management System (NIMS) and public health is the clearly delineated MFM lead at the federal and state levels.

When it comes to coordination of MFM preparedness, response, and recovery, emergency management is off the hook according to the responding emergency management directors. This belief belies the fact that emergency management is the designated central point of coordination for response and recovery to disaster. The emergency managers indicate that county coroners should be coordinating the MFM effort, while the majority of both the county coroners and health commissioners believe the coordination responsibility validly rests with emergency management. Both emergency management directors and health commissioners believe, however, that the Ohio Department of Health (ODH) is the lead coordinating agency at the state level while the county coroners identify the Ohio Emergency Management Agency (OEMA). Even the health commissioners name OEMA as a close second behind ODH for state coordination.

Regardless of the confusion over C2 and coordination of MFM planning, response, and recovery, the respondents believe that there are workable partnerships in

place at the jurisdictional level. Each group agrees/strongly agrees (>80%) that they can locally partner to achieve MFM capability. While the majority of all respondents from all groups are aware of Ohio's release of the *Acute Mass Fatalities Incident Response Plan*, most respondents indicate that they have no idea what is actually in the plan or if it could really help MFM response in PI, with greater than fifty percent (>50%) choosing the "neither agree or disagree" option for Question 11 in each group. This response has major implications for the release of *Ohio's Non-Acute Mass Fatalities Incident Response Plan* slated for the fall of 2008. Paper plans need peopled participation for true operational capability. The uncertainty continues on to the question on determination of a PI death as a coroner's case with not just the emergency managers but also the county coroners. This indecision is most likely affecting the respondents' view of C2 status, as well.

There is one area that all three groups of respondents understand: who should be and who actually is at the table for MFM planning are not one and the same. In a correlated T-test, each of the groups showed significant differences in their response to Question 4 versus Question 5. The results are shown in Table 4. A review of the responses indicates that the county coroners believe funeral directors are being left out of the planning; emergency managers believe that both funeral directors and mental health are being omitted; and health commissioners believe that funeral directors, mental health, and county coroners are not being included in MFM capability building.

PARTNERS Who is involved versus Who should be involved?	PAIRED SAMPLES TEST – Paired Differences					
	Mean	Std. Deviation	Std. Error Mean	T	df	Sig. (2-tailed)
County Coroners Q4-Q5	.400	.675	.123	3.247	29	.003
Emergency Management Q4-Q5	.556	.735	.122	4.537	35	.000
Health Commissioners Q4-Q5	.825	.708	.089	9.253	62	.000

Table 4. Paired T-Test Analysis of Question 4 and 5 by Target Audiences

Question 14 was the one question in this section that showed a statistical difference among the groups.⁹ When it comes to confidence in Ohio's ability to bring regional and state consistency to MFM through the planning process, the county coroners are much more optimistic than are the emergency management directors and the health commissioners.

These responses in this section underscore the confusion existing regarding MFM C2 and coordination. It would appear that none of the key stakeholders understands who is or who should be leading or coordinating the MFM effort. This state of affairs obviously impacts any consistency in MFM planning. In addition, the three groups agree that those who should be involved in MFM planning, especially those in the funeral director and mental health provider communities, are not at the table.

3. Current MFM Planning and Operations

A select analysis of the target audiences' perceptions regarding current MFM planning and operations (Regional Mass Fatality Management in Catastrophe Surge: County Coroners, Questions 15-26; Regional MFM in Catastrophe Surge: County Emergency Managers, Questions 15-30; and Regional MFM in Catastrophe Surge: City and County Health Commissioners, Questions 15-28) is found in Table 5.

CURRENT MFM PLANNING AND OPERATIONS	County Coroners	Emergency Management	Health Commissioners
Critical MFM resources which are deemed inaccessible (Q15)	PPE Vaccines Fuel Commo Bandwidth Security	Vaccine	Fuel Raw Materials Transportation Security
Jurisdiction has viable plans to request critical assistance from the State	(Q18) Agree/Strongly Agree (63%)	(Q17) Agree/Strongly Agree (76%)	(Q17) Agree/Strongly Agree (64%)
Confidence in morgue space expansion capacity sustainment	(Q20) Disagree/Strongly Disagree (37%) Neutral (27%)	(Q18) Disagree/Strongly Disagree (58%) Neutral (21%)	N/A

⁹ Kruskal-Wallis: Chi-Square of 7.907, df 2, and Asymp. Sig. @ .019.

CURRENT MFM PLANNING AND OPERATIONS	County Coroners	Emergency Management	Health Commissioners
Jurisdiction has addressed surge with developed protocols	(Q23) Disagree/Strongly Disagree (40%) Neutral (33%)	(Q24) Disagree/Strongly Disagree (29%) Neutral (40%)	(Q21) Disagree/Strongly Disagree (40%) Neutral (22%)
Jurisdiction has pre-identified temporary burial sites/cremation capacity for death surge	(Q24) Disagree/Strongly Disagree (47%)	(Q25) Disagree/Strongly Disagree (55%)	(Q22) Disagree/Strongly Disagree (36%)
Clear lines of communication and authority exist for MFM capability success	(Q25) Disagree/Strongly Disagree (27%) Neutral (33%) Agree/Strongly Agree (40%)	(Q29) Disagree/Strongly Disagree (34%) Neutral (29%) Agree/Strongly Agree (37%)	(Q27) Disagree/Strongly Disagree (35%) Neutral (40%) Agree/Strongly Agree (33%)

Table 5. Analysis of Current MFM Planning and Operations across Target Audiences

There appears to be a general lack of county coroner confidence in the jurisdictional ability to get resources to the funeral industry during a catastrophic death surge. The items for the resource listing in Question 15 were reviewed with the Ohio County Coroners Association board members prior to building the question, and it appears that the board's concern about sustainment of death surge operations is shared by their entire group. This is not so with emergency management and public health. In fact, the major resource concern that emergency management directors have is over obtaining vaccines from the public health system. The health commissioners, in turn, have no worries over obtaining health protection related resources for the funeral industry in their region; their only resource worries relate to emergency management areas of coordination: transportation and fuel, along with security. The differential on this question alone would give rise to a concern that the groups are not talking to each other or, at the very least, are planning for MFM in isolation. The coup de grâce indicator that this isolation may be reality is the pervasive belief and confidence across the groups that they have the procedures in place to request critical assistance from the state. That is,

every group is continuing to count on a traditional, vertical emergency management response (local – state – federal) in a pandemic environment affecting all resources and all geo-locations at once in all-hands on deck, parallel need.

Further evidence of this “we’re counting on the state and feds” thinking is apparent in the responses to questions involving the expansion of MFM operations jurisdictionally to address catastrophic surge. None of the three groups has confidence in the jurisdictional (local) ability to sustain an increase in morgue space, that they have addressed MFM protocols, or that their respective jurisdictions have addressed temporary mass burial or allowed for adjustments in cremation operations to address death surge (Table 4). The county coroners (60%) and emergency managers (53%) admit that they do not have even a 10-day stockpile of critical MFM supplies in their locales. In addition, all three groups clearly indicate that they just do not know about trained and organized volunteer support for MFM as evidenced by the spread responses across the strongly disagree to strongly agree continuum for Question 19 (county coroners and emergency managers) and Question 16 (health commissioners.)

In spite of this widespread lack of confidence and doubt, the groups tend to rally around the ability of traditional lines of communication and authority in disaster (local-state-federal) to ensure the best possible outcome in MFM (Table 5). The health commissioners are a bit more distrustful regarding this traditional capability, however. The county coroners (67%), emergency management directors (55%), and health commissioners (56%) all have confidence in their jurisdictional governmental leaders and public information officers to deliver honest and timely MFM information to the community, even in light of the operational deficits previously identified.

In summary, given the traditional disaster response thinking about MFM on the part of the key stakeholder groups in combination with the identification of the MFM operational response and recovery deficits, it would appear that the target audiences are counting on the state and federal backup to calm the catastrophic MFM deficits in their hour of jurisdictional need.

4. Perception of Operational Strengths, Weaknesses, and Barriers

All three groups identify their existing partners in disaster response as their major MFM strength. Respondents indicate that they already talk with these partner agencies, are comfortable in that communication flow for the most part, and are counting on these previous relationships to get their jurisdiction through the death surge. Another strength listed by both the coroners and the emergency managers is the perception that some level of pre-planning for MFM exists at the county level. Of course, just as many coroners also listed the lack of MFM pre-planning as their top worry.

Using *Wordle Create* (Feinberg, 2008), a “word cloud” was generated from the combined text responses that the target audiences provided in their response to: “The best thing my jurisdiction has going in terms of MFM is __” and is found in Figure 3. The cloud configuration gives greater prominence to words that appear more frequently in the source text, actually providing a qualitative analytical graphic of the survey response. It is obvious in this word cloud that the existing partnerships take first seat in terms of existing jurisdictional strengths that would support MFM capability.



Figure 3. *Wordle* Word Cloud from Across-Group Perceptions of MFM Strengths

There is no one chink in the MFM armor on which the target audience agrees. Planners working in the medical and public health surge field refer to three major categories of need: stuff, staff, and systems (Barbisch, 2006). These needs are present regardless whether the surge involves the living or the dead, and the needs obviously become much more chaotic in catastrophe. Stuff involves supplies and equipment; staff involves manpower for both response and recovery; and systems involve the infrastructure needed to ensure surge capability. Most often, as covered in the previous literature review in Chapter II, the emphasis in surge planning has been on the right stuff (i.e., equipment and supplies), with staff hovering at a close second. It is interesting that both the emergency managers and health commissioners identify infrastructure, or the system, as their number one worry. This selection may show their maturity in awareness regarding the MFM planning effort. Health commissioners introduce yet another factor into the worry equation: state guidance. It is clear by their voicing this worry that they are looking to the state to lay the framework for MFM response. Of all three groups, health commissioners probably best understand the parallel demand implications of a non-geographic based catastrophic incident such as a pandemic. All three groups do voice their concern, as well, about resources in terms of MFM weakness in preparedness: a primary concern for coroners and a secondary one for emergency management directors and health commissioners.

Another word cloud was generated from the combined text responses that the target audiences provided in their response to: “The thing that worries me the most in terms of MFM is ___” and is found in Figure 4.

All three groups list financial barriers as a major barrier to successful MFM planning in their jurisdictions. There is a pervasive theme in the respondent perceptions that if only they could obtain the money to get the stuff and staff, the equipment, supplies, and manpower, they would successfully manage mass fatality – even in catastrophic surge. The health commissioner group did have a bit of a different take on this view. In fact, they were the only group that identified a financial and operational duality as the “biggest barrier.” They were the only group that listed legal barriers, as well. This difference in response did approach statistical significance for the health commissioner target audience when analyzed against the other two groups.¹⁰

Figure 5. *Wordle* Word Cloud from Across-Group Perception of MFM Barriers

C. SUMMARY SURVEY IMPLICATIONS

County coroners, emergency management directors, and health commissioners are the key stakeholders and in positions of authority to address mass fatality management in the State of Ohio. These individuals are mature professionals with disciplinary-specialized expertise. They understand their responsibilities to their communities, most often defining their jurisdiction at the county level. Although the survey presented a unique opportunity for the respondents to think about MFM concepts, reality based planning that translates into operational response and recovery has not yet been accomplished when addressing catastrophic death surge related to a non-scene based incident like a pandemic. The respondent stakeholders appear mired in traditional MFM thinking. That is, they are without a consistent, coherent pathway to achieve MFM capability at the *regional* level. Even though they understand that a local county approach in and of itself is not feasible, they are still (magically) counting on the state and feds to pull them out.

The survey reveals respondent confusion in terms of MFM response in general (e.g., command and control, coordination, lead agencies at the local and state levels) and in specific (e.g., reality of resource flow, futility of isolated single group planning efforts, missing parties at the planning table) to the uniqueness of a pandemic incident. While there appears to be agreement on the seriousness and urgency of MFM capabilities in a pandemic environment, no one group is ready to step forward and claim leadership or even coordination.

The numerous comments submitted in conjunction with the survey questions express a common theme: “where do we start?” While it is true that catastrophic surge planning may appear a bridge too far at the jurisdictional (local) level without clarity for operational guidance at the state or federal guidance, no one group is proposing regional operations that extend beyond the usual MOU approach.

The bottom line of the survey results and data analysis is apparent: there is a lack of consistency and coordination across the key stakeholder groups. MFM capability in a pandemic cannot be achieved in this environment.

V. RECOMMENDATIONS AND SUMMARY

The concluding chapter of this thesis presents several approaches to enhance the opportunities for building a strong MFM capability at the regional level. Although the recommendations are designed to enable MFM capacity in Ohio, they are also applicable to other states and regions. Given the survey results and the current MFM planning mandates from the federal government, it is imperative that MFM planning is implemented in a consistent and coordinated way. Actionable planning that includes citizens, businesses, and government representation is an immediate need.

All sectors of the death care industry must be actively engaged to ensure realistic MFM operational planning. In Ohio, the use of the *Non-Acute Mass Fatalities Incident Response Plan* as well as the national recommendations of the Mass Fatality Working Group and a strong international model like that of the UK will provide a bridge to MFM operations (OEMA, 2008; Gursky, 2007; Home Office, 2008). In the end, mass fatality capability equates with collaborative capacity, which is defined as “the ability of organizations to enter into, develop, and sustain inter-organizational systems in pursuit of collective outcomes (Thomas, Hocevar, and Jansen, 2006, p. 9).”

A. FINAL REVIEW

1. The MFM Challenge: Identifying Gaps, Barriers, and Next Steps

The survey research conducted in Ohio specifically addressed realistic and actionable MFM planning by: 1) identifying state guidance gaps; 2) identifying local/regional operational gaps; 3) assessing regional resource capabilities; 4) categorizing proposed solutions to address identified gaps; and 5) listing legal, financial, and organizational barriers to the solutions. The following research questions guided the investigation into statewide MFM during catastrophic surge:

- What are the current gaps in Ohio’s guidance for fatality management?
- What are the current gaps in fatality management operational capability at the local and regional levels?

- What is the current status of fatality management surge resources (e.g., staff, stuff [equipment and supplies], systems) at the local and regional level?
- What are the legal, financial, and/or organizational barriers, if any, to Ohio's mass fatality management?
- How might the information and recommendations gained from this study be used in other states and across the nation?

The data results from the *Regional Mass Fatality Management in Catastrophic Surge Survey* provide the answer to these research questions and also provide a starting point for an ongoing MFM regional planning process using public engagement, one of the recommendations for actionable planning offered below.

In addition to the survey results, this thesis provides a thorough review of the literature in the area of catastrophic death surge. While there has been a significant amount of writing related to a traditional mass fatality response, published MFM literature related to non-scene based death surge from a pandemic remains sparse (Connolly, 2006; Fells, 2006; Gerber 2007). The literature review provides a strong foundation for identifying MFM gaps, barriers, and next steps in this country and in its diverse communities.

2. Current MFM Guidance Gaps

Fatality management is defined as:

The capability to effectively perform...transportation, storage, documentation, and recovery of forensic and physical evidence; identification of the fatalities using scientific means; certification of the cause and manner of death; processing and returning of human remains and personal effects of the victims to the legally authorized person(s); and interaction with and provision of legal, customary, compassionate, and culturally competent required services to the families of deceased within the context of the family assistance center...through a unified command structure (DHS, 2007b, p. 571).

The *Public Health and Medical Services Annex, Emergency Support Function* (ESF) 8, *National Response Framework* contains no detailed guidance for strategic and operational response or recovery for mass-fatality incidents that enter into the

catastrophic realm (Gursky, 2007, p. 3; NORTHCOM and HHS, 2006a, p. 2). The topic of death and matters associated with the dignified disposal of tens of thousands of bodies remains the “final frontier” for open discussion in the U.S. disaster planning community and with policymakers. Actionable MFM guidance at the national level is lacking.

The State of Ohio recently released the *Acute Mass Fatalities Incident Response Plan* (OEMA, 2007c), but the guidance was confined to traditional, scene-based, DMORT-assisted definition of mass fatalities. Although there is a key stakeholder awareness of the *Acute MFM Plan*, most survey respondents have not read it and do not understand the difference between “acute mass fatalities” and “non-acute mass fatalities.” The latter term, used in a second Ohio MFM guidance document soon to be released, will provide guidance options for non-scene based mass fatality response. If the *Non-Acute Mass Fatalities Incident Response Plan* is released in the same manner as its companion, there is little doubt that it will fall into the same “non-use” crack. In addition, there has been no concerted effort to include private industry and business in the planning (e.g., funeral directors and mortuary providers.) The citizens-at-large occupy space in this same planning gap.

In Ohio, mass fatality response and recovery is assumed and assigned as a public health function under Emergency Support Function (ESF) 8 by the state (OEMA, 2007a). Responsibility for leadership and coordination of MFM at the local level, however, is not clearly defined or assigned, as confirmed by the survey respondents. Actionable MFM guidance at the state level is lacking. Furthermore, in the survey results, the key stakeholders expressed a vote of non-confidence in their state partners’ ability to address such guidance for capable MFM operations realistically.

3. Current MFM Operational and Resource Gaps

Ohio key stakeholders do not agree on the lead agency for MFM operations command and control or for MFM coordination except in one area: nobody is overly excited about stepping into the MFM leadership void. The key stakeholders also believe that there are needed operational partners missing in the planning process such as funeral directors and faith-based community members. Local officials acknowledge that their

counties cannot sustain MFM operations at the jurisdictional level, but no one is working on regional collaboration beyond traditional memorandums of understanding (MOU's) for back-up support and resources. It only stands to reason that neighboring counties will also be too overwhelmed with their own death surge demands to free up the needed resources to fulfill these pre-existing MOUs in a pandemic environment.

While MFM planning is sporadically occurring across Ohio's counties, written plans, morgue space, and temporary interment strategies and tactics for the potential level of PI death surge have not been addressed. Neither have the alliances necessary to achieve MFM capability been formed. A megacommunity, defined as "any large ongoing sphere of interest where governments, corporations, NGOs, and others intersect over time (Gerencser, Lee, Napolitano, and Kelly, 2008, p. 54)," could be such an alliance in order to sustain MFM regional operations. The alliance, of course, would need to include all three sectors: government, industry and business, and citizens.

Currently, local officials in Ohio are still counting on the cavalry when they think about MFM in pandemic surge. Although they are unsure of which direction the cavalry is coming from, they are still confident in its magical protection and powers for response and recovery operations. This unrealistic trust, sans open and honest planning, is precisely why MFM operations are vulnerable to breakdown during a long-term pandemic. Key stakeholders are not collaboratively planning with one another in a realistic way. Echoing Reina and Reina's (2007) work on trust (or breakdown thereof), there are government officials at the state level indicating to their locals: "we have you covered." In turn, the already overburdened local jurisdictional MFM leads want to believe that when the pandemic arrives, the state and federal assets will come through. Unfortunately, wishful thinking will not provide MFM capability, and a traditional disaster infrastructure delivered in the vertical mode (only) cannot address catastrophic surge. General Gordon R. Sullivan, former U.S. Army Chief of Staff, wrote *Hope is Not a Method* (1997) with good reason after years of battling bureaucratic barricades.

Since the end of the Cold War, the United States Army has been reengineered and downsized more thoroughly than any other business. In the early 1990s, General Sullivan, army chief of staff, and Colonel Harper, his key strategic planner, took the post-Cold War army into the

Information Age. Faced with a 40 percent reduction in staff and funding, they focused on new peacetime missions, dismantled a cumbersome bureaucracy, reinvented procedures, and set the guidelines for achieving a vast array of new goals (G. R. Sullivan, 1997).

4. Current MFM Starting Points and Barriers

Fortunately, the perceived value of MFM partners already engaged, as well as the desire of key stakeholders to start MFM planning, is high. Collaboration and the ability to work together through cooperation certainly form a good starting point for state readiness in MFM operations. Fiscal barriers are viewed as the largest perceived hurdle in MFM planning as identified by the key stakeholders. The fiscal barrier is directly related to the perceived shortage of resources to accomplish MFM capability, a perception that most likely represents traditional thinking about disaster surge and assumes that staff and staff equates with a capable response. Health commissioners and emergency management directors did identify organizational obstacles as the second place barrier. This response, as supported by the written comments, echoes the general survey response themes of: “Who’s in charge? Who’s coordinating the effort? What’s our role? Are all of the partners at the planning table? How does my county go to a regional provision without state guidance?” As previously emphasized, a disaster surge response without system (infrastructure) ability cannot succeed.

B. RECOMMENDATIONS

1. Align State Guidance with the Mass Fatality Working Group’s Guidance

State guidance for MFM in catastrophic surge must align with the premiere MFM planning guidance to date in the United States, produced by the Mass Fatality Working Group, convened in 2006 by the United States Northern Command (NORTHCOM) in cooperation with the Department of Health and Human Service (HHS). The group’s MFM guidance is delivered through actionable recommendations to be addressed in seven major areas (Gursky, 2007, p. 4):

- Command and control
- Body identification
- Medico-legal investigation
- Morgue operations
- Funeral services
- Final disposition
- Family assistance and behavioral health services

That means, of course, that the issues in each of these areas must be addressed with operational detail. Hard topics like cremation capacity, temporary interment, RFID tagging techniques, virtual family assistance centers, and faith based flexibility will need to be grappled with among stakeholders and without our societal curtain of death secrecy.

Ohio's pending *Non-Acute Mass Fatality Incident Response Plan* defines non-acute death as death, which occurs through a situation developing "over an extended time period due to disease, biological, chemical, or radiological contamination to include pandemics (OEMA, 2008)." The state's *Non-Acute Plan* should align with these seven areas, encouraging regional operations to do the same through the clustering of related tactical effort at the local level (i.e., counties x and y take on final disposition via temporary interment, morgue operations are handled by big city z, etc.).¹¹

The existing work of the Mass Fatality Working Group should be annotated along with Ohio's *Non-Acute Plan*, assuring that the questions involved in the group's national MFM gap analysis are clearly identified in the state guidance and discussed in public engagement efforts in order to better plan operations at the regional level (NORTHCOM and HHS, 2006a, pp. 1, 3; 2006b, pp. 11-12; 2006c, pp. 2-3):

¹¹ By virtue of this study, the author had the opportunity to join the mass fatality planning cell partway through the writing of the *Non-Acute Plan*. Areas from the Mass Fatality Working Group were incorporated into its final draft; the push for regionalization of effort did not arrive due to ongoing legal issues surrounding the authority of regional versus county jurisdiction within the *Ohio Revised Code*.

a. *Questions Related to Authority/Policy and Procedures*

How might fatality management lines of authority and relevant policies and procedures be established at the national and state levels in order to provide a template or guide for local planning? What elements within this guidance are critical for field expedient identification and disposition of pandemic influenza victims in a nation of varied cultures, religious backgrounds, socio-economics and values? Since communication and clear lines of authority during all stages of the pandemic are essential to successful MFM planning and operations, how can relevant stakeholders be identified and included in the development of *pre-event* pandemic education plan for emergency center operations personnel and the public?

b. *Questions Related to Already Developed Pandemic Influenza Planning*

How should currently mandated state pandemic influenza plans be adapted and/or modified to ensure realistic mass fatality management at the local level? Who should be involved in coordinating and leading this effort? Given that it is the current capacity of local funeral and mortuary services operations that will ultimately be overwhelmed, how will protocol be defined for handling, processing, safe keeping, and disposition of large numbers of remains in a respectful and dignified manner?

c. *Questions Related to Private versus Public Responsibilities and Roles*

How does a professional body of practice (i.e., the death care industry) develop a non-traditional first responder mindset in order to deliver field expedient mortuary services in disaster surge? Why are funeral service personnel, suppliers and other mortuary service operations not routinely included in disaster planning for a PI surge that will result in hundreds and thousands of bodies to identify and humanely dispose of? How do the local level responders prepare for this role without a promise of state or federal assistance? The ability to respond effectively to a pandemic event depends on the availability of critical resources (e.g., vaccine, fuel, utilities, labor, raw

materials, transportation, security, communication bandwidth, etc.) as well as the surge competencies of the professional group utilizing the resources (e.g., public education messages, pre-established partnerships, incident management knowledge). How might state PI plans be developed, adapted and/or modified to address resource, logistics, and funding concerns down to assurance of local capacity?

d. Questions Related to Family Assistance Efforts

How might a virtual Family Assistance Center (FAC) be established in a communicable infectious disease environment using the internet, newspapers and television to disburse educational information to the public? How might a national database for missing persons be set up to address the concerns related to relatives and others who are unaccounted for? Given the contagious nature of PI and given that the gathering and milling about of people at the FAC will be not be feasible during social distancing, how will FACs operate? Since death surge related to PI will be chronic rather than static (acute and scene-based), how will waves of deaths over a period of several weeks and involving multiple family members at different times, affect needed distribution of information? How can the needed information be pushed rather than pulled (i.e., needing to bring people in) to obtain information about potential fatalities? Since local jurisdictions will be overwhelmed with response, how will the federal level of government coordinate and manage a nationwide need for information regarding missing persons in a highly mobile and family-separated society?

It is only when these questions are addressed that actionable operations for MFM capability will be developed at the regional level. There are operational and tactical MFM options available to address these questions; the harder issue involves engaging the population in value-laden decisions as to which solution fits best in their community. The guidance should encourage and address the latter; much like the U.K.'s MFM planning has accomplished (Home Office, 2008).

2. Ensure Alliances that Promote the Megacommunity

Mass fatality management in catastrophic surge is a problem that cannot be solved by single sectors, be they government, business, or citizens. A mass fatality incident due to PI would create a chaotic environment almost immediately after recognized arrival in the United States. In addition, the death surge would stretch far beyond a three-day, 72-hour period. MFM in PI is a large-scale, complex undertaking; mutual effort for a three-sector “megacommunity” engagement is a must. It should be increasingly apparent after several national disasters that “local communities are neither constrained nor protected by age-old boundaries of geography and demography (Gerencser et al., 2007, p. 2).” In Florida, for example, leaders recognized that no single organization could effectively meet the demands of hurricane preparedness and subsequent response. They came to this conclusion after a less than successful response to and recovery from Hurricane Andrew. Afterwards, Florida officials engaged the megacommunity, to include a wide range of non-profit groups and businesses, in future hurricane preparedness efforts with subsequent operational success (Gerencser, 2007, pp. 25-27).

The megacommunity (Figure 6) depicts alliances where members use joint efforts for leverage in order to accomplish the mission without giving up organizational and agency authority. Importantly, all of the players are aware and knowledgeable about what death surge would require of each sector. Also, to date, funeral directors, mental health, hospitals, faith-based representatives and citizens-at-large have been left behind in addressing MFM due to a bevy of societal mores and governmental concerns. In order to be disaster ready, our communities cannot afford such omissions.

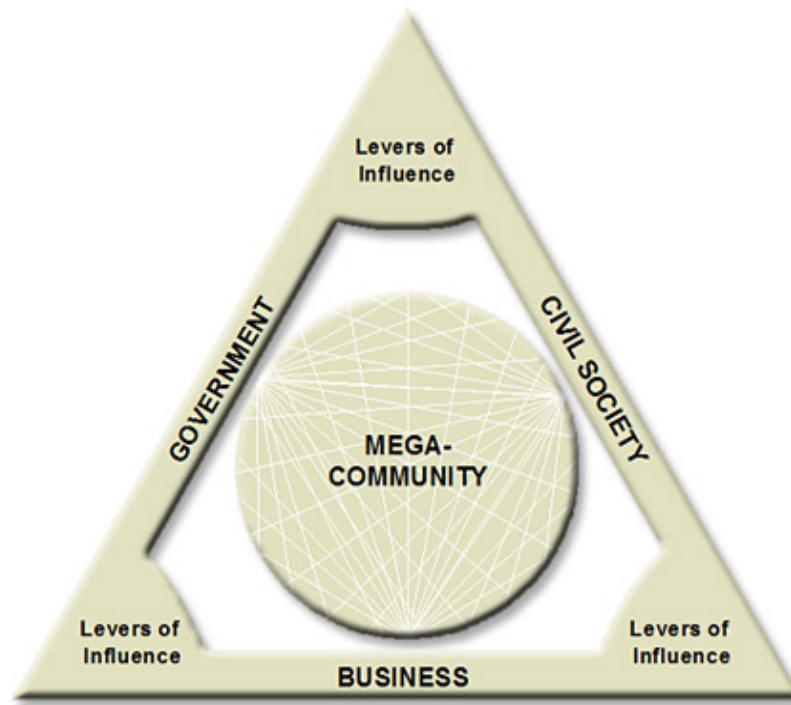


Figure 6. Megacommunity Thinking (From: Gerencser et al., 2007)

3. Engage the Public in Open Talk about a Forbidden Topic

The public engagement model recommended for MFM planning in Ohio follows the model and process template developed by the Centers for Disease Control and Prevention (CDC) *Public Engagement Project on Community Control Measures for Pandemic Influenza* (The Keystone Center, 2007). The project engaged the public in discussions and deliberations about the economic and social tradeoffs associated with community control measures (non-pharmaceutical) to slow pandemic influenza disease spread. The MFM public engagement project is slated for implementation in two pilot homeland security (HLS) regions during the fall and winter of 2008-2009.¹²

The pilot project's goal is to build the MFM capacity at the regional level in Ohio in two regions: Southeast HLS Region 1 (Ross, Pike, Hocking, Vinton, and Jackson

¹² The pilot project is funded through CDC and the Ohio Department of Health pandemic influenza cooperative agreement dollars. The public engagement process will be coordinated and facilitated by The Ohio State University (OSU) Office of Workforce Development (OWD) and its Ohio Center for Public Health Preparedness, located in OSU's College of Public Health.

Counties) with a population of 175,000 and the Northwest HLS Region (Six Pack – Williams, Henry, Fulton, Paulding, Putnam, and Defiance Counties) with a population 200,000. The identified counties in these two HLS regions will participate in a discussion of policy decisions related to MFM in pandemic influenza. The OWD will work collaboratively with the identified alliances in both geographic areas to accomplish planning for MFM capability.

The public engagement model will be used to connect megacommunity members for MFM policy discussion and deliberation, integrating the social network analysis results described in the regional recommendation section. Results from the three surveys will also be used: *Regional Mass Fatality Management in Catastrophe Surge: County Coroners*; *Regional Mass Fatality Management in Catastrophe Surge: County Emergency Managers*; and *Regional Mass Fatality Management in Catastrophe Surge: City and County Health Commissioners* (Appendices A and B.) The public engagement model will provide the vision, sense of contribution, full engagement, sense of progress, and goal coherence needed to jump start regional MFM capability (Cross and Parker, 2004, pp. 57-63). The public engagement forums for MFM include one day of discussion and deliberation devoted to business and government and one day to the citizen group. The project will:

- Inform and assist state and local level decision-makers involved in pending, values-oriented policy decisions related to MFM in pandemic influenza planning
- Evaluate the effectiveness of engaging both citizens-at-large and other stakeholders in public health policy decisions surrounding MFM
- Increase state and local capacity to engage the public on policy choices in MFM effectively
- Empower citizens to participate effectively in public decision-making work regarding MFM
- Achieve results that enhance public trust in public health decisions regarding policy choices in MFM

There will be cross-over representation for both groups (e.g., some citizens will be present at the business and government meeting and vice-versa.) Each day will begin with a short education and training session on the realities of MFM in pandemic

influenza. Focus sessions follow which will engage the megacommunity in deliberations about MFM measures that might be implemented in the event of overwhelming death surge related to pandemic influenza. After small group and large group discussions, the stakeholders and citizens will be invited to vote electronically on a series of questions designed to evaluate their level of support for the proposed MFM measures.

All small and large group sessions will be recorded and transcribed by objective, trained observers. Themes will be identified by multiple raters using qualitative data analysis. An independent evaluation will include four possible components: a pre-post survey completed by citizens and stakeholders (which will produce additional quantitative data beyond the previous statewide survey intervention), qualitative data on deliberations and prioritized decisions gathered during the day-long sessions for both citizens and stakeholders, focus groups conducted with citizens immediately after each meeting, and a document review to assess how the public engagement process influenced policy.

Once the pilot project is evaluated per the cooperative agreement plans, the formal process will be ready for statewide distribution and implementation. The release of this public engagement process, of course, extends well beyond the specific topic of MFM planning for regional capacity in pandemic surge. The process could be generalized for other disaster planning topics and certainly used across Ohio's state boundaries. Ultimately, the project could assist states to:

- Publicly identify of major categories of challenges associated with the implementation of proposed mass fatality planning
- Build internal and external trust among the megacommunity members who participate, enhancing true partnerships and community resiliency
- Replicate the MFM public engagement project as a pending decision process to drive other complex disaster related response and recovery decisions

4. Promote Regional Response and Recovery without Reinventing the Wheel

The traditional verticality of the local-state-federal levels of disaster paradigm is firmly etched in the nation's pre-2005 planning documents, as well as its resulting emergency planning and response infrastructure (DHS, 2008b, pp. 1-11). Yet, community capability in public health surge in catastrophic incidents demands a *regional* response as the minimum level of initial coordination (Inglesby, 2006). "Comprehensive regional preparedness is key to ensuring that communities, states, and the nation can expeditiously respond to and recover from disasters of all types, particularly extreme events (TISP, 2006, p. 3)."

Project Public Health Ready (PPHR), a project of the National Association of City and County Health Departments (NACCHO) and the CDC, recently published a planning guide to address regional planning development. The three-phase, 11-step plan lays out a template for the creation of a regional approach to achieve capability in terms of prevention, protection, response and recovery (Estrada, Lenihan, Shiu, Sutton, and Welter, 2007, p. 12). It also provides descriptions and examples of different collaboration models to include networking, coordinating, standardizing, and centralizing. This model should be used to start the process of regional response capabilities.

As a part of the previously described public engagement effort, a network analysis specific to MFM infrastructure and involving government, business, and citizen should be conducted.

Complex issues naturally draw people into networks. As a result, the structure of a megacommunity — based as it is on overlapping issues — exhibits many properties of a network. ... In a healthy megacommunity, the three sectors maintain balance by "pushing" and "pulling" at each other according to their respective forms of influence. (Gerencser et al., 2007, p. 55).

The existing MFM network at the *regional* level must be identified in order to garner support for MFM effort in operational planning, response, and recovery. Although the *Regional Mass Fatality Management in Catastrophe Surge Survey* results

provide a snapshot on the state of MFM, it is limited to the three stakeholder respondent groups and not representative of the larger (mega) community. Answers to the following questions should be included in the network identification in the pilot public engagement forums (Gerencser et. al., 2007, p. 119):

- What are the major drivers for MFM societal values, impact, and cost?
- Which members of the megacommunity does MFM capability depend on (i.e., what is the extended enterprise)? Have they been included?
- What are the strategic risks of regional MFM organization for response and recovery?
- What global (statewide and national) issues will have a direct and material impact on MFM capabilities in the region? How about an indirect impact?
- What issues is the megacommunity concerned about regarding MFM response and recovery to include: partners, resource suppliers, lead agents, and legal code?

In order for MFM to go from local to regional variations, the following would need to occur (Estrada et al., 2007, p. 6):

- The development of a common vision in order to reduce the daunting initial complexity (using the Mass Fatality Working Group's approach previously addressed)
- The development of a planning process using PPHR's planning framework template
- An analysis of possible outcomes and obstacles that can be expected in the development of regional readiness and use of a Public Engagement Process

5. Considerations for Implementation of Recommendations

A new national survey reveals that a startling number of small businesses remain unprepared to face a potential disaster, be that a hurricane, tornado, wildfire or computer virus, and the majority of these businesses have no plans to change (CPM Global Assurance, 2008). At the same time, the nation's homeland security and health emergency policies do not adequately reflect the civic infrastructure's proven

contributions and capabilities in disaster planning (Schoch-Spana et al., 2007, p. 8). The public engagement activities recommended for implementation at the regional level provide one way to chip away at this involvement dilemma.

An individual who is an advocate-champion will be required for reality-based MFM planning and to bridge operational conversion of the community at large. One very important part of the publicly engaged network, though, would be to keep the key stakeholders and government officials at the local jurisdiction levels from hindering the process with “we do it this way because I (my agency) knows best” ideas for MFM response and recovery. If true inclusion of citizens, business, and government is to be accomplished, then oversight and protection against “expert” and authoritative edicts is a must. Although the latter may well abound, the planning must be addressed with non-traditional voices to succeed in a non-traditional environment of chaos. Also, catalysts at the regional level must be quickly identified to drive and sustain those non-traditional inputs and assure a true megacommunity effort during the public engagement period and beyond. There is one local county coroner, for example, currently in Northwest HLS Region in Ohio, who has been responsible for galvanizing stakeholders around the concept of regional mass fatality planning for a surge event like PI. This group, in turn, is busy gathering others into the fold. This effort occurred prior to any operational guidance or mandates from the state level and certainly without any concrete leadership at the national level. Since one of the first pilots for public engagement effort will take place in this region, this scenario will provide an opportunity to take a closer look at just how champions and catalysts affect the disaster planning community.

Successful MFM planning requires expeditious action by entire communities. Decisions and policies need to be informed by factual information and by thoughtful weight of competing societal values. Somebody is going to have to lead the discussion about the probability of death in a catastrophic incident like pandemic influenza, regardless of the best laid plans for life-safety response efforts. The sheer magnitude of such a death surge in light of the initial non-availability of vaccine as well as the use of early treatment versus prophylactic antivirals must be honestly broached in terms of

public education. There is also a need for open discussion about dealing with death and body care in the home, something that most of the U.S. society has avoided exposure to for over 75 years.

Figure 7 presents a summary look at achieving the implementation of the MFM recommendations is through an action framework that takes advantage of driving forces for change (Kim and Mauborgne, 2005, p. 35; Swinton, n.d.). The driving forces are found in the categories of “eliminate, reduce, raise, and create.” Restraining forces are implied in the “eliminate” and “reduce” categories and involve a local (county) mindset that belies the reality of catastrophic surge, leading to duplication without an economy of scale effort (regional). If the aforementioned champions and catalysts in the change process can take advantage of and sustain these driving forces, then a workable and realistic MFM capability will be achieved.

Eliminate <ul style="list-style-type: none"> • MFM as a competitive commodity • Wasted energy and resources in duplication (coffins, PPE, burial sites) • Local competition for MFM sourcing • Unrealistic paper planning 	Raise <ul style="list-style-type: none"> • MFM capability • Mission unity • Key stakeholder coordination • Megacommunity MFM awareness • COMMUNITY preparedness
Reduce <ul style="list-style-type: none"> • Death care industry and system seams • Bickering at the county level • Cost (fiscal barriers) • Public apathy from non-involvement 	Create <ul style="list-style-type: none"> • Public health as ESF #8 MFM lead • Surge capability • Family assistance and support • MFM guidance at the state level • MFM operations at the county level • A REGIONAL disaster planning model

Figure 7. Recommendations’ Goal for Success in MFM – Eliminate-Reduce-Raise-Create Grid (After: Kim and Mauborgne, 2005, p. 95)

6. Future Research Recommendations

The literature review revealed the lack of continuity in planning as well as the lack of realistic planning that currently exists in state pandemic influenza plans and other planning documents. This thesis has presented one planning topic germane to a non-geographically based catastrophic disaster: mass fatality management in pandemic surge. The recommendations made in this thesis include the use of sound national guidance specific to a disaster topic, public engagement at the megacommunity level with balanced citizen, government, and business membership, and a regional versus local (horizontal versus vertical) disaster response approach. Any of these recommendations would provide a pathway for a more in-depth research approach specific to mass fatality management or another aspect of catastrophic disaster such as pandemic surge. Such research should move beyond the traditional views of emergency management and reach out to assure true community involvement in the process: before, during, and after the chaos that would accompany such an incident.

C. SUMMARY

This thesis has proposed a suite of actionable recommendations for regional mass fatality management planning in the State of Ohio. The recommendations also have applicability for MFM response and recovery plans beyond Ohio's borders. Mass fatality management planning, like all disaster planning, demands shared multidisciplinary and multiagency participation as well as private industry, business, and public input. Active collaboration among all mass fatality management stakeholders must be achieved in order to develop actionable MFM at the regional level.

While it may be true that all disaster response is "local" within the national disaster planning framework, recent incidents have clearly demonstrated that certain types of disasters quickly reach a catastrophic threshold, almost immediately exhausting local resources for sustainment due to surge response demand and the ensuing recovery period. Pandemic influenza would create such a pandemic surge, circling the globe and our nation in several waves with resulting mortality surges. This type of surge demands local catastrophic capabilities to include a *regional* response level as the minimum level

of initial coordination. In higher level disaster (i.e., catastrophe), local jurisdictions would need to move almost immediately into multi-effort, collaborative, horizontal operations to sustain response and recovery.

The very topic of death surge demands weighing competing societal values along with its reality-based technical knowledge and information. It is absolutely essential that the public and private death infrastructure become a part of the MFM policy decisions in order to energize trust between authorities and the public pre-incident. To date, public and stakeholder engagement in pre-event PI planning for value-laden decisions is a necessary yet missing part of national and state planning. It is past time for a change.

Regions need to build capability for sustained resiliency and operational reality into disaster planning efforts posthaste. This must happen without the usual drill: paper the process, shelve it, and respond with a best intended effort, all the while counting on outside resources when the situation soars and then sours. This traditional type of MFM is exactly the response currently written into most current planning for Pandemic Influenza (PI). Responders to an incident that is simultaneously affecting numerous communities and many states (i.e., a non-scene based incident) cannot waste time and effort by counting on outside resources, state or federal, that will be required and competed for nationwide. There will be no nationally supported safety net in such circumstances. Communities must look to their own stakeholders and citizens to find realistic ways of augmenting and expanding their PI plans in order to ensure sustainability.

As this chapter closes, the U.K. has moved ahead in the release of MFM planning and realities, with London just promoting a citizen-at-large version of the MFM plan in order to further local resiliency efforts (London Resilience Partnership, 2008). In the U.S., though, public health planners are still worried about quarantine, antiviral policies, and resource supply chains in PI, with several local and state level entities railing against current federal guidance (Kimery, 2008). Driven by the Joint Commission's Hospital Accreditation Organization's Standards (JCHAO's) EC 4.18.5, hospitals are racing to create their own mass fatality plans, with Los Angeles just releasing what will undoubtedly become another planning template (Los Angeles County, 2008). This most

recent plan puts the coroner in the lead agency status, but alludes to the fact that public health may also be in the lead, advising hospitals to stay tuned for breaking information. There is still no formal national guidance and the state of the MFM art in catastrophic surge is not much advanced, perpetually taking a back seat to all of the other disaster planning demands, which involve the living.

The time is right and the need is still critical in terms of MFM planning in this nation. If the nation, states, regions, and local entities do not acknowledge the need for a different type of approach for a non-scene based mass fatality response, this country will remain unprepared — without the operational capability to address catastrophic mass fatalities related to a widespread and communicable disease like PI realistically.

The actionable MFM recommendations contained in this research enable the local players responsible for catastrophic mass fatality to operate consistently at a regional level, engaging their stakeholders and communities and asking for, then using state and national guidance. Catastrophic MFM planning has the potential to assure other state capabilities. Ultimately, this national homeland security dilemma is about an incident with the negative ability to deter the public's confidence in their government during disaster, possibly impacting other response and recovery efforts. This nation and its disaster assets possess the ability to face value laden decisions like MFM with the wealth of collaborative energy and reality of specialized technical expertise that the deceased and their families will demand in a catastrophic mass fatality incident. Somebody just needs to lead the way.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A. SURVEY DOCUMENTS OR DOCUMENTS RELATED TO THE SURVEY

A. REGIONAL MFM IN CATASTROPHE SURGE-HC

Regional Mass Fatality Management in Catastrophe Surge - County
1. Regional Mass Fatality Management in Catastrophe Surge- County and City Hea...
<p>CONSENT FOR PARTICIPATION IN RESEARCH Mass Fatality Management in Catastrophic Surge</p> <p>Thank you for your interest in participating in this study. In order to make sure you are provided with information prior to taking the study, please read the informed consent information below. If after reading the document you are still interested in participating, please continue to the next page of the survey.</p> <p>Adult Informed Consent: IRB Protocol # 2007E0871</p> <p>Dear Study Participant,</p> <p>You are eligible to participate in this study if you are 19 years old or older. Your participation in the survey indicates your consent. This study consists of an online survey entitled Mass Fatality Management in Catastrophic Surge. The online portion will take approximately 30 minutes to complete.</p> <p>For those of you interested and able to participate in this study, your time and effort is greatly appreciated. Your honest and conscientious responses to the questionnaire will enable the ability to plan mass fatality management at the regional level in Ohio.</p> <p>There are no known risks to participating in this study. The electronic survey tool does not track your email or IP address. Your responses, then, remain anonymous. Please read carefully all of the instructions on the online survey.</p> <p>Please feel free to contact Dr. Sharon A. R. Stanley, at The Ohio Center for Public Health Preparedness at ssstanley@cph.osu.edu, or at 614.292.5524, if you have any questions or concerns about this study. You may also contact the secondary researcher, Ms. Michelle Baker, at mbaker@cph.osu.edu or 614.292.1620. If you have any other questions concerning your rights as a participant in this study, you may contact the Institutional Review Board.</p> <p>By continuing to the next page (link below), you are consenting to participate in research entitled: Mass Fatality Management in Catastrophic Surge.</p> <p>By continuing to the next page you acknowledge that Dr. Sharon A. R. Stanley, Principal Investigator, has satisfactorily explained the purpose of the study, the procedures to be followed, and the expected duration of your participation. Possible benefits of the study have been described, as have alternative procedures, if such procedures are applicable and available.</p> <p>By continuing to the next page, you acknowledge that you have had the opportunity to obtain additional information regarding the study and that any questions you may have raised have been answered to your satisfaction. Furthermore, you understand that you are free to withdraw consent at any time and to discontinue participation in the study without prejudice.</p> <p>By continuing to the next page, you acknowledge that you have read and fully understand the consent form. Note: If you wish to keep a copy of this Adult Informed Consent, you will have the option at the end of the survey of requesting an email copy of the Adult Informed Consent.</p>

Regional Mass Fatality Management in Catastrophe Surge - County

2. Regional Mass Fatality Management in Catastrophe Surge- County and City Hea...

An influenza pandemic will result in waves of mass fatalities sustained over extended periods of time without geographic concentration (e.g., non-scene based). Given the enormous and concurrent need for resources over wide geographic areas combined with staffing shortages of essential service employees, mass fatality planning for Pandemic Influenza is unlike prior planning endeavors. "A pandemic is not like a hurricane or an earthquake, where resources and help can be shifted from one area to another. Should it occur, every community will need to rely on its own planning and its own resources as it fights the outbreak." - DHHS Secretary Michael Leavitt, 2006.

This Mass Fatality Management (MFM) survey has been sent to all county coroners in Ohio, in addition to county emergency management directors and city/county health commissioners. It was reviewed by members of the Ohio State Coroner's Association (OSCA) prior to its release. The survey explores the current state of Mass Fatality Management (MFM) in Ohio (e.g., knowledge of existing guidance, jurisdictional planning confidence, partner identification, and barriers to fatality management capabilities). It will also help provide a baseline for the development of actionable regional planning for catastrophic levels of fatalities.

Based on CDC FluAid 2.0 software calculations using a 35% attack rate and Ohio 2005 population estimates, a mild case Pandemic Influenza scenario (1968-like occurrence) could produce up to an additional 10,666 deaths and a worst case scenario (1918-like occurrence) up to an additional 87,661 deaths.

Note: Fatality Management is a Target Capability within the National Preparedness Guidelines (USDHS, Target Capabilities List, September 2007). Fatality Management is defined as: "The capability to effectively perform scene documentation; the complete collection and recovery of the dead, victim's personal effects, and items of evidence; transportation, storage, documentation, and recovery of forensic and physical evidence; identification of the fatalities using scientific means; certification of the cause and manner of death; processing and returning of human remains and personal effects of the victims to the legally authorized person(s); and interaction with and provision of legal, customary, compassionate, and culturally competent required services to the families of deceased within the context of the family assistance center." p. 519

1. My agency is the lead for coordination of Mass Fatality Management (MFM) in my jurisdiction.



2. My agency has entered into Memorandums of Understanding (MOUs) within our Homeland Security Region (HLS Region) or is counting on neighboring/regional help during MFM related to Pandemic Influenza (PI).



3. Although MFM operations occur at the local level, my jurisdiction is a part of regional planning and response at the Regional HLS level.



Regional Mass Fatality Management in Catastrophe Surge - County

4. The following partners should be involved in MFM within my jurisdiction:

	Health department	Emergency management agency	Funeral directors	County coroner	Mental Health
Partners who should be involved (please choose all that apply)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="text"/>				

Regional Mass Fatality Management in Catastrophe Surge - County

3. Regional Mass Fatality Management in Catastrophe Surge- County and City Hea...

Note: Actual jurisdictional partnering involves meetings within the last year or published joint planning documents or annexes specific to MFM.

5. The following partners are involved in MFM within my jurisdiction: (choose all that apply)

	Health department	Emergency management agency	Funeral directors	County coroner	Mental health
Partners actually involved in MFM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other (please list all)

6. The lead agency for the command and control of MFM during an incident affecting my jurisdiction is the:

	Health department	Emergency management agency	Funeral directors	County coroner	Unified Command with multiple leads
Local command and control during MFM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please list)

7. The lead agency for MFM coordination in my jurisdiction is the:

	Health department	Emergency management agency	Funeral directors	County coroner	Mental health
Local coordination lead during MFM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please list)

Regional Mass Fatality Management in Catastrophe Surge - County

4. Regional Mass Fatality Management in Catastrophe Surge- County and City Hea...

8. I am confident that I can work with my jurisdictional partners to accomplish MFM planning, response, and recovery.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in working MFM planning with partners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Mass fatalities related to Pandemic Influenza (PI) should be considered coroner's cases.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
PI fatalities considered coroner's cases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. I have read or have access to Ohio's Acute Mass Fatalities Incident Response Plan released in May 2007 (Tab D to Emergency Support Function #8 Public Health and Medical Services).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Access to Ohio's Mass Fatalities Incident Response Plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. I am confident that Ohio's Acute Mass Fatalities Incident Response Plan can guide my jurisdiction's response to MFM in PI.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in Ohio's Acute Mass Fatality Plan for local guidance in PI	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. The lead agency for MFM coordination at the state level is the:

	Ohio Department of Health	Ohio Emergency Management Agency	Ohio Funeral Directors Association	Ohio State Coroners Association
State coordination during MFM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please list)

Regional Mass Fatality Management in Catastrophe Surge - County

5. Regional Mass Fatality Management in Catastrophe Surge- County and City Hea...

13. I am confident that the state partners can work together to accomplish needed guidance during MFM planning, response, and recovery.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in state partners ability to work together	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: Codes, regulations, and traditional practices can sometimes produce cumbersome process and hinder seamless support through mutual aid or assistance from neighboring communities.

14. I am confident that Ohio can bring regional and state consistency to MFM through the planning process.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in ability for regional and state consistency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. My agency is prepared to assist the funeral industry in my jurisdiction to obtain access to each of these resource categories so it can provide first response during a MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Labor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supplies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal protective equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vaccines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fuel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Raw materials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communication bandwidth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

6. Regional Mass Fatality Management in Catastrophe Surge- County and City Hea...

16. My jurisdiction has organized and trained volunteers from the community to assist with and support MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
Community volunteers organized and trained	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. My jurisdiction has established simple, uniform procedures to request critical assistance from the state to expedite obtaining people, supplies, equipment, and/or operational assistance.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Procedures in place to request state assistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. I am confident that my agency can complete death certificates and accompanying burial/provisional or cremation permits through the Electronic Death Registration System in mass fatality.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in agency completion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

7. Regional Mass Fatality Management in Catastrophe Surge- County and City Hea...

19. My jurisdiction's Citizen Corps is a viable source of volunteers for MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Citizen Corps is a source of volunteers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. My jurisdiction's Medical Reserve Corps is a viable source to expand subject matter expertise and bolster MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Medical Reserve Corps is a source of assistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. My jurisdiction has addressed the expected surge in morgue and funeral capacity by defining standard protocols for handling, processing, securing, and disposing of large numbers of remains in a respectful and dignified manner.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Protocol for surge in place	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

8. Regional Mass Fatality Management in Catastrophe Surge- County and City Hea...

Note: Ohio Revised Code Sec 4717.13 dictates identification methods (e.g., tags and data) to be used in carrying out mass burials and cremations.

22. My jurisdiction has pre-identified possible mass burial sites (temporary) or cremation arrangements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Temporary mass burial sites or cremation identified	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. I am confident that my agency can process and track disposition of fatalities through the Electronic Death Registration System (EDRS) during MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in processing and tracking of fatalities during MFM using EDRS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: The use of a family assistance center in an environment of communicable disease and social distancing may not be feasible.

24. My jurisdiction is planning to implement supportive capabilities for families and communities that are flexible and appropriate to a communicable disease environment (i.e., virtual family support centers).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Virtual family support center concept considered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25. My jurisdiction has collected and/or prepared emergency public information and educational information related to MFM that will reduce disease exposure and protect families.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Pre-planning for public information accomplished	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26. My jurisdiction has explored interventions and strategies regarding special populations as related to MFM (e.g., those with mental or behavioral illnesses or disabilities).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Special populations considered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

27. I am confident that there are clear lines of communication and authority at the local, regional, and state levels to ensure the best possible outcome in MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in communication and authority	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28. Government leaders and public information officers in my jurisdiction are prepared to deliver honest and timely information to the community during MFM - before, during, and after the incident.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Leaders prepared to deliver MFM information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

9. Regional Mass Fatality Management in Catastrophe Surge- County and City Hea...

29. The best thing my jurisdiction has going in terms of MFM is:

30. The thing that worries me the most in terms of MFM is:

31. The biggest barrier to successful MFM in my jurisdiction falls into the following category:

Please briefly describe the barrier:

Demographic Information

32. Years in Position

33. Health Department Type

34. Professional Identification (Check all that apply)

☐

Physician

☐

Dentist

☐

Veterinarian

☐

Nurse

☐

Sanitarian

☐

MPH

Other (please list)

35. Age

36. Homeland Security Region

37. ADDITIONAL COMMENTS

B. REGIONAL MFM IN CATASTROPHE SURGE-CEM

Regional Mass Fatality Management in Catastrophe Surge - County
1. Regional Mass Fatality Management in Catastrophe Surge- County Emergency Ma...
<p>CONSENT FOR PARTICIPATION IN RESEARCH Mass Fatality Management in Catastrophic Surge</p> <p>Thank you for your interest in participating in this study. In order to make sure you are provided with information prior to taking the study, please read the informed consent information below. If after reading the document you are still interested in participating, please continue to the next page of the survey.</p> <p>Adult Informed Consent: IRB Protocol # 2007E0871</p> <p>Dear Study Participant,</p> <p>You are eligible to participate in this study if you are 19 years old or older. Your participation in the survey indicates your consent. This study consists of an online survey entitled Mass Fatality Management in Catastrophic Surge. The online portion will take approximately 30 minutes to complete.</p> <p>For those of you interested and able to participate in this study, your time and effort is greatly appreciated. Your honest and conscientious responses to the questionnaire will enable the ability to plan mass fatality management at the regional level in Ohio.</p> <p>There are no known risks to participating in this study. The electronic survey tool does not track your email or IP address. Your responses, then, remain anonymous. Please read carefully all of the instructions on the online survey.</p> <p>Please feel free to contact Dr. Sharon A. R. Stanley, at The Ohio Center for Public Health Preparedness at ssstanley@cph.osu.edu, or at 614.292.5524, if you have any questions or concerns about this study. You may also contact the secondary researcher, Ms. Michelle Baker, at mbaker@cph.osu.edu or 614.292.1620. If you have any other questions concerning your rights as a participant in this study, you may contact the Institutional Review Board.</p> <p>By continuing to the next page (link below), you are consenting to participate in research entitled: Mass Fatality Management in Catastrophic Surge.</p> <p>By continuing to the next page you acknowledge that Dr. Sharon A. R. Stanley, Principal Investigator, has satisfactorily explained the purpose of the study, the procedures to be followed, and the expected duration of your participation. Possible benefits of the study have been described, as have alternative procedures, if such procedures are applicable and available.</p> <p>By continuing to the next page, you acknowledge that you have had the opportunity to obtain additional information regarding the study and that any questions you may have raised have been answered to your satisfaction. Furthermore, you understand that you are free to withdraw consent at any time and to discontinue participation in the study without prejudice.</p> <p>By continuing to the next page, you acknowledge that you have read and fully understand the consent form. Note: If you wish to keep a copy of this Adult Informed Consent, you will have the option at the end of the survey of requesting an email copy of the Adult Informed Consent.</p>

Page 1

Regional Mass Fatality Management in Catastrophe Surge - County

2. Regional Mass Fatality Management in Catastrophe Surge- County Emergency Ma...

An influenza pandemic will result in waves of mass fatalities sustained over extended periods of time without geographic concentration (e.g., non-scene based). Given the enormous and concurrent need for resources over wide geographic areas combined with staffing shortages of essential service employees, mass fatality planning for Pandemic Influenza is unlike prior planning endeavors. "A pandemic is not like a hurricane or an earthquake, where resources and help can be shifted from one area to another. Should it occur, every community will need to rely on its own planning and its own resources as it fights the outbreak." - DHHS Secretary Michael Leavitt, 2006.

This Mass Fatality Management (MFM) survey has been sent to all county coroners in Ohio, in addition to county emergency management directors and city/county health commissioners. It was reviewed by members of the Ohio State Coroner's Association (OSCA) prior to its release. The survey explores the current state of Mass Fatality Management (MFM) in Ohio (e.g., knowledge of existing guidance, jurisdictional planning confidence, partner identification, and barriers to fatality management capabilities.) It will also help provide a baseline for the development of actionable regional planning for catastrophic levels of fatalities.

Based on CDC FluAid 2.0 software calculations using a 35% attack rate and Ohio 2005 population estimates, a mild case Pandemic Influenza scenario (1968-like occurrence) could produce up to an additional 10,666 deaths and a worst case scenario (1918-like occurrence) up to an additional 87,661 deaths.

Note: Fatality Management is a Target Capability within the National Preparedness Guidelines (USDHS, Target Capabilities List, September 2007). Fatality Management is defined as: "The capability to effectively perform scene documentation; the complete collection and recovery of the dead, victim's personal effects, and items of evidence; transportation, storage, documentation, and recovery of forensic and physical evidence; identification of the fatalities using scientific means; certification of the cause and manner of death; processing and returning of human remains and personal effects of the victims to the legally authorized person(s); and interaction with and provision of legal, customary, compassionate, and culturally competent required services to the families of deceased within the context of the family assistance center." p. 519

1. My agency is the lead for coordination of Mass Fatality Management (MFM) in my jurisdiction.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
Lead agency status	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. My agency has entered into Memorandums of Understanding (MOUs) within our Homeland Security Region (HLS Region) or is counting on neighboring/regional help during MFM related to Pandemic Influenza (PI).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
MOUs or regional assistance expectation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Although MFM operations occur at the local level, my jurisdiction is a part of regional planning and response at the Regional HLS level.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Part of regional planning and response	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

4. The following partners should be involved in MFM within my jurisdiction:

	Health department	Emergency management agency	Funeral directors	County coroner	Mental Health
Partners who should be involved (please choose all that apply)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="text"/>				

Regional Mass Fatality Management in Catastrophe Surge - County

3. Regional Mass Fatality Management in Catastrophe Surge- County Emergency Ma...

Note: Actual jurisdictional partnering involves meetings within the last year or published joint planning documents or annexes specific to MFM.

5. The following partners are involved in MFM within my jurisdiction: (choose all that apply)

	Health department	Emergency management agency	Funeral directors	County coroner	Mental health
Partners actually involved in MFM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other (please list all)

6. The lead agency for the command and control of MFM during an incident affecting my jurisdiction is the:

	Health department	Emergency management agency	Funeral directors	County coroner	Unified Command with multiple leads
Local command and control during MFM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please list)

7. The lead agency for MFM coordination in my jurisdiction is the:

	Health department	Emergency management agency	Funeral directors	County coroner	Mental health
Local coordination lead during MFM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please list)

Regional Mass Fatality Management in Catastrophe Surge - County

4. Regional Mass Fatality Management in Catastrophe Surge- County Emergency Ma...

8. I am confident that I can work with my jurisdictional partners to accomplish MFM planning, response, and recovery.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in working MFM planning with partners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Mass fatalities related to Pandemic Influenza (PI) should be considered coroner's cases.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
PI fatalities considered coroner's cases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. I have read or have access to Ohio's Acute Mass Fatalities Incident Response Plan released in May 2007 (Tab D to Emergency Support Function #8 Public Health and Medical Services).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Access to Ohio's Mass Fatalities Incident Response Plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. I am confident that Ohio's Acute Mass Fatalities Incident Response Plan can guide my jurisdiction's response to MFM in PI.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in Ohio's Acute Mass Fatality Plan for local guidance in PI	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. The lead agency for MFM coordination at the state level is the:

	Ohio Department of Health	Ohio Emergency Management Agency	Ohio Funeral Directors Association	Ohio State Coroners Association
State coordination during MFM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please list)

Regional Mass Fatality Management in Catastrophe Surge - County

5. Regional Mass Fatality Management in Catastrophe Surge- County Emergency Ma...

13. I am confident that the state partners can work together to accomplish needed guidance for MFM planning, response, and recovery.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in state partners ability to work together	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: Codes, regulations, and traditional practices can sometimes produce cumbersome process and hinder seamless support through mutual aid or assistance from neighboring communities.

14. I am confident that Ohio can bring regional and state consistency to MFM through the planning process.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in ability for regional and state consistency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. My agency is prepared to assist the funeral industry in my jurisdiction to obtain access to each of these resource categories so it can provide first response during a MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Labor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supplies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal protective equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vaccines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fuel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Raw materials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communication bandwidth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

6. Regional Mass Fatality Management in Catastrophe Surge- County Emergency Ma...

16. My jurisdiction has organized and trained volunteers from the community to assist with and support MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
Community volunteers organized and trained	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. My jurisdiction has established simple, uniform procedures to request critical assistance from the state to expedite obtaining people, supplies, equipment, and/or operational assistance.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Procedures in place to request state assistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. I am confident that my jurisdiction has viable plans to augment existing morgue space for an extended time period (up to six months).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in storage expansion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. My jurisdiction has access to a stockpile of critical supplies to support MFM operations for 10 days.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Stockpile access to 10 days of critical supplies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. My jurisdiction has agreements in place to ensure that MFM operations are supported by a priority distribution of water, generators, and gasoline.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Agreements in place for priority distribution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

7. Regional Mass Fatality Management in Catastrophe Surge- County Emergency Ma...

21. My jurisdiction has explored strategies to augment transportation of human remains during MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Transportation strategies have been explored	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. My jurisdiction's Citizen Corps is a viable source of volunteers for MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Citizen Corps is a source of volunteers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. My jurisdiction's Medical Reserve Corps is a viable source to expand subject matter expertise and bolster MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Medical Reserve Corps is a source of assistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. My jurisdiction has addressed the expected surge in morgue and funeral capacity by defining standard protocols for handling, processing, securing, and disposing of large numbers of remains in a respectful and dignified manner.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Protocol for surge in place	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

8. Regional Mass Fatality Management in Catastrophe Surge- County Emergency Ma...

Note: Ohio Revised Code Sec 4717.13 dictates identification methods (e.g., tags and data) to be used in carrying out mass burials and cremations.

25. My jurisdiction has pre-identified possible mass burial sites (temporary) or cremation arrangements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Temporary mass burial sites or cremation identified	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: The use of a family assistance center in an environment of communicable disease and social distancing may not be feasible.

26. My jurisdiction is planning to implement supportive capabilities for families and communities that are flexible and appropriate to a communicable disease environment (i.e., virtual family support centers).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Virtual family support center concept considered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. My jurisdiction has collected and/or prepared emergency public information and educational information related to MFM that will reduce disease exposure and protect families.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Pre-planning for public information accomplished	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28. My jurisdiction has explored interventions and strategies regarding special populations as related to MFM (e.g., those with mental or behavioral illnesses or disabilities).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Special populations considered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

29. I am confident that there are clear lines of communication and authority at the local, regional, and state levels to ensure the best possible outcome in MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in communication and authority	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

30. Government leaders and public information officers in my jurisdiction are prepared to deliver honest and timely information to the community during MFM - before, during, and after the incident.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Leaders prepared to deliver MFM information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

9. Regional Mass Fatality Management in Catastrophe Surge- County Emergency Ma...

31. The best thing my jurisdiction has going in terms of MFM is:

32. The thing that worries me the most in terms of MFM in my jurisdiction is:

33. The biggest barrier to successful MFM in my jurisdiction falls into the following category:

Please briefly describe the barrier:

Demographic Information

34. Years in Position

35. Professional Identification (Fire, Law Enforcement, City Planner)

Other (please specify)

36. Age

37. Homeland Security Region

38. ADDITIONAL COMMENTS

C. REGIONAL MFM IN CATASTROPHE SURGE-CC

Regional Mass Fatality Management in Catastrophe Surge - County
1. Regional Mass Fatality Management in Catastrophe Surge- County Coroner Grou...
<p>CONSENT FOR PARTICIPATION IN RESEARCH Mass Fatality Management in Catastrophic Surge</p> <p>Thank you for your interest in participating in this study. In order to make sure you are provided with information prior to taking the study, please read the informed consent information below. If after reading the document you are still interested in participating, please continue to the next page of the survey.</p> <p>Adult Informed Consent: IRB Protocol # 2007E0871</p> <p>Dear Study Participant,</p> <p>You are eligible to participate in this study if you are 19 years old or older. Your participation in the survey indicates your consent. This study consists of an online survey entitled Mass Fatality Management in Catastrophic Surge. The online portion will take approximately 30 minutes to complete.</p> <p>For those of you interested and able to participate in this study, your time and effort is greatly appreciated. Your honest and conscientious responses to the questionnaire will enable the ability to plan mass fatality management at the regional level in Ohio.</p> <p>There are no known risks to participating in this study. The electronic survey tool does not track your email or IP address. Your responses, then, remain anonymous. Please read carefully all of the instructions on the online survey.</p> <p>Please feel free to contact Dr. Sharon A. R. Stanley, at The Ohio Center for Public Health Preparedness at ssstanley@cph.osu.edu, or at 614.292.5524, if you have any questions or concerns about this study. You may also contact the secondary researcher, Ms. Michelle Baker, at mbaker@cph.osu.edu or 614.292.1620. If you have any other questions concerning your rights as a participant in this study, you may contact the Institutional Review Board.</p> <p>By continuing to the next page (link below), you are consenting to participate in research entitled: Mass Fatality Management in Catastrophic Surge.</p> <p>By continuing to the next page you acknowledge that Dr. Sharon A. R. Stanley, Principal Investigator, has satisfactorily explained the purpose of the study, the procedures to be followed, and the expected duration of your participation. Possible benefits of the study have been described, as have alternative procedures, if such procedures are applicable and available.</p> <p>By continuing to the next page, you acknowledge that you have had the opportunity to obtain additional information regarding the study and that any questions you may have raised have been answered to your satisfaction. Furthermore, you understand that you are free to withdraw consent at any time and to discontinue participation in the study without prejudice.</p> <p>By continuing to the next page, you acknowledge that you have read and fully understand the consent form. Note: If you wish to keep a copy of this Adult Informed Consent, you will have the option at the end of the survey of requesting an email copy of the Adult Informed Consent.</p>

Page 1

Regional Mass Fatality Management in Catastrophe Surge - County

2. Regional Mass Fatality Management in Catastrophe Surge- County Coroner Group...

An influenza pandemic will result in waves of mass fatalities sustained over extended periods of time without geographic concentration (e.g., non-scene based). Given the enormous and concurrent need for resources over wide geographic areas combined with staffing shortages of essential service employees, mass fatality planning for Pandemic Influenza is unlike prior planning endeavors. "A pandemic is not like a hurricane or an earthquake, where resources and help can be shifted from one area to another. Should it occur, every community will need to rely on its own planning and its own resources as it fights the outbreak." - DHHS Secretary Michael Leavitt, 2006.

This Mass Fatality Management (MFM) survey has been sent to all county coroners in Ohio, in addition to county emergency management directors and city/county health commissioners. It was reviewed by members of the Ohio State Coroner's Association (OSCA) prior to its release. The survey explores the current state of Mass Fatality Management (MFM) in Ohio (e.g., knowledge of existing guidance, jurisdictional planning confidence, partner identification, and barriers to fatality management capabilities). It will also help provide a baseline for the development of actionable regional planning for catastrophic levels of fatalities.

Based on CDC FluAid 2.0 software calculations using a 35% attack rate and Ohio 2005 population estimates, a mild case Pandemic Influenza scenario (1968-like occurrence) could produce up to an additional 10,666 deaths and a worst case scenario (1918-like occurrence) up to an additional 87,661 deaths.

Note: Fatality Management is a Target Capability within the National Preparedness Guidelines (USDHS, Target Capabilities List, September 2007). Fatality Management is defined as: "The capability to effectively perform scene documentation; the complete collection and recovery of the dead, victim's personal effects, and items of evidence; transportation, storage, documentation, and recovery of forensic and physical evidence; identification of the fatalities using scientific means; certification of the cause and manner of death; processing and returning of human remains and personal effects of the victims to the legally authorized person(s); and interaction with and provision of legal, customary, compassionate, and culturally competent required services to the families of deceased within the context of the family assistance center." p. 519

1. I am the lead agent for coordination of Mass Fatality Management (MFM) in my jurisdiction.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
Lead agent status	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. My office has entered into Memorandums of Understanding (MOUs) within our Homeland Security Region (HLS Region) or is counting on neighboring/regional help during MFM related to Pandemic Influenza (PI).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
MOU's or regional assistance expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Although MFM operations occur at the local level, my jurisdiction is a part of planning and response at the Regional HLS level.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Part of regional planning and response	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

4. The following partners should be involved in MFM within my jurisdiction:

	Health department	Emergency management agency	Funeral directors	County coroner	Mental Health
Partners who should be involved (please choose all that apply)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="text"/>				

Regional Mass Fatality Management in Catastrophe Surge - County

3. Regional Mass Fatality Management in Catastrophe Surge- County Coroner Grou...

Note: Actual jurisdictional partnering involves meetings within the last year or published joint planning documents or annexes specific to MFM.

5. The following partners are involved in MFM within my jurisdiction:

	Health department	Emergency management agency	Funeral directors	County coroner	Mental health
Partners actually involved in MFM (please choose all that apply)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other (please list all)

6. The lead agent for command and control of MFM during an incident affecting my jurisdiction is the:

	Health department	Emergency management agency	Funeral directors	County coroner	Unified Command with multiple leads
Local command and control during MFM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please list)

7. The lead agent for MFM coordination in my jurisdiction is the:

	Health department	Emergency management agency	Funeral directors	County coroner	Mental health
Local coordination lead during MFM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please list)

Regional Mass Fatality Management in Catastrophe Surge - County

4. Regional Mass Fatality Management in Catastrophe Surge- County Coroner Group...

8. I am confident that I can work with my jurisdictional partners to accomplish MFM planning, response, and recovery.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in working MFM planning with partners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Mass fatalities related to Pandemic Influenza (PI) should be considered coroner's cases.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
PI fatalities considered coroner's cases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. I have read or have access to Ohio's Acute Mass Fatalities Incident Response Plan released in May 2007 (Tab D to Emergency Support Function #8 Public Health and Medical Services).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Access to Ohio's Mass Fatalities Incident Response Plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. I am confident that Ohio's Acute Mass Fatalities Incident Response Plan can guide my jurisdiction's response to MFM in PI.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in Ohio's Acute Mass Fatality Plan for local guidance in PI	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. The lead agent for MFM coordination at the state level is the:

	Ohio Department of Health	Ohio Emergency Management Agency	Ohio Funeral Directors Association	Ohio State Coroners Association
State coordination during MFM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please list)

Regional Mass Fatality Management in Catastrophe Surge - County

5. Regional Mass Fatality Management in Catastrophe Surge- County Coroner Grou...

13. I am confident that the state partners can work together to accomplish needed guidance for MFM planning, response, and recovery.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in state partners ability to work together	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: Codes, regulations, and traditional practices can sometimes produce cumbersome process and hinder seamless support through mutual aid or assistance from neighboring communities.

14. I am confident that Ohio can bring regional and state consistency to MFM through the planning process.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in ability for regional and state consistency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. The funeral industry in my jurisdiction has access to each of these resource categories so it can provide first response during a MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Labor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supplies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal protective equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vaccines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fuel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Raw materials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communication bandwidth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. My jurisdiction has pre-identified community-based collection points and morgues that meet temperature requirements (37-42 degrees Fahrenheit).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Pre-identification of sites that meet temperature requirements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

6. Regional Mass Fatality Management in Catastrophe Surge- County Coroner Grou...

17. My jurisdiction has organized and trained volunteers from the community to assist with and support MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
Community volunteers organized and trained	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. My jurisdiction has established simple, uniform procedures to request critical assistance from the state to expedite obtaining people, supplies, equipment, and/or operational assistance.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Procedures in place to request state assistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. I am confident that my office can facilitate and provide oversight assurance in mass fatality to pronounce death, determine the cause and manner of death, complete death certificates, and establish victim identity.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in office facilitation and oversight	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. I am confident that my jurisdiction has viable plans to augment existing morgue space for an extended time period (up to six months).

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in storage expansion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. My office has a stockpile of critical supplies to support MFM operations for 10 days.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Stockpile access to 10 days of critical supplies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

7. Regional Mass Fatality Management in Catastrophe Surge- County Coroner Group...

22. My office has agreements in place to ensure that MFM operations are supported by priority distribution of water, generators, and gasoline.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Agreements in place for priority distribution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. My jurisdiction has addressed the expected surge in morgue and funeral capacity by defining standard protocols for handling, processing, securing, and disposing of large numbers of remains in a respectful and dignified manner.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Protocol for surge in place	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: Ohio Revised Code Sec 4717.13 dictates identification methods (e.g., tags and data) to be used in carrying out mass burials and cremations.

24. My jurisdiction has pre-identified possible mass burial sites (temporary) or cremation arrangements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Temporary mass burial sites or cremation identified	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25. I am confident that there are clear lines of communication and authority at the local, regional, and state levels to ensure the best possible outcome in MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Confidence in communication and authority	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26. Government leaders and public information officers in my jurisdiction are prepared to deliver honest and timely information to the community during MFM - before, during, and after the incident.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Leaders prepared to deliver MFM information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regional Mass Fatality Management in Catastrophe Surge - County

8. Regional Mass Fatality Management in Catastrophe Surge- County Coroner Grou...

27. The best thing my jurisdiction has going in terms of MFM is:

28. The thing that worries me the most in terms of MFM is:

29. The biggest barrier to successful MFM in my jurisdiction falls into the following category:

Please briefly describe the barrier:

Demographic Information

30. Years in Position

31. Professional Identification [Physician or Other(please specify)]

Other (please specify)

32. Age

33. Homeland Security Region

34. ADDITIONAL COMMENTS

D. REGIONAL MFM IN CATASTROPHE SURGE-COMBINED DOCUMENT

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
INTRO SECTION	<p><i>Results of the survey will be released through group analysis and report, down to the homeland security regional level (only). Your participation is completely voluntary and you may stop the survey at any time. The survey is designed to take about 30 minutes to complete.</i></p> <p><i>This Mass Fatality Management survey has been sent to all county coroners in Ohio, in addition to county emergency management directors and city/county health commissioners. It was reviewed at the executive leadership level by the Ohio State Coroner's Association prior to its release. The survey's purpose is to explore the current state of Mass Fatality Management (MFM) in Ohio to include the identification of knowledge of existing guidance, jurisdictional confidence in planning, identification of partners, and possible barriers to fatality management operational capability at the local and regional levels. Most importantly, it will assist in providing a baseline for the development of actionable regional planning for catastrophic levels of fatalities (e.g., during Pandemic Influenza).</i></p>	<p><i>Results of the survey will be released through group analysis and report, down to the homeland security regional level (only). Your participation is completely voluntary and you may stop the survey at any time. The survey is designed to take about 30 minutes to complete.</i></p> <p><i>This Mass Fatality Management survey has been sent to all county emergency management directors in Ohio, in addition to county coroners and city/county health commissioners. It was reviewed at the executive leadership level by the Ohio Emergency Management Association prior to its release. The survey's purpose is to explore the current state of Mass Fatality Management (MFM) in Ohio to include the identification of knowledge of existing guidance, jurisdictional confidence in planning, identification of partners, and possible barriers to fatality management operational capability at the local and regional levels. Most importantly, it will assist in providing a baseline for the development of actionable regional planning for catastrophic levels of fatalities (e.g., during Pandemic Influenza).</i></p>	<p><i>Results of the survey will be released through group analysis and report, down to the homeland security regional level (only). Your participation is completely voluntary and you may stop the survey at any time. The survey is designed to take about 30 minutes to complete.</i></p> <p><i>This Mass Fatality Management survey has been sent to all city/county health commissioners in Ohio, as well as all county coroners and county emergency management directors. It was reviewed at the executive leadership level by the Association of Ohio Health Commissioners prior to its release. The survey's purpose is to explore the current state of Mass Fatality Management (MFM) in Ohio to include the identification of knowledge of existing guidance, jurisdictional confidence in planning, identification of partners, and possible barriers to fatality management operational capability at the local and regional levels. Most importantly, it will assist in providing a baseline for the development of actionable regional planning for catastrophic levels of fatalities (e.g., during Pandemic Influenza).</i></p>

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
What is Mass Fatality?	<p><i>An influenza pandemic will result in waves of mass fatalities sustained over extended periods of time without geographic concentration (e.g., non-scene based.) Given the enormous and concurrent need for resources over wide geographic areas combined with staffing shortages of essential service employees, mass fatality planning for Pandemic Influenza is unlike any prior disaster planning endeavor. “A pandemic is not like a hurricane or an earthquake, where resources and help can be shifted from one area to another. Should it occur, every community will need to rely on its own planning and its own resources as it fights the outbreak.” – DHHS Secretary Michael Leavitt, 2006</i></p> <p><i>Based on CDC FluAid 2.0 software calculations using a 35% attack rate and Ohio 2005 population estimates, a mild case Pandemic Influenza scenario (1968 occurrence) could produce up to an additional 10,666 deaths and a worst case scenario (1918-like occurrence) up to an additional 87,661 deaths.</i></p>	<p><i>An influenza pandemic will result in waves of mass fatalities sustained over extended periods of time without geographic concentration (e.g., non-scene based.) Given the enormous and concurrent need for resources over wide geographic areas combined with staffing shortages of essential service employees, mass fatality planning for Pandemic Influenza is unlike any prior disaster planning endeavor. “A pandemic is not like a hurricane or an earthquake, where resources and help can be shifted from one area to another. Should it occur, every community will need to rely on its own planning and its own resources as it fights the outbreak.” – DHHS Secretary Michael Leavitt, 2006</i></p> <p><i>Based on CDC FluAid 2.0 software calculations using a 35% attack rate and Ohio 2005 population estimates, a mild case Pandemic Influenza scenario (1968 occurrence) could produce up to an additional 10,666 deaths and a worst case scenario (1918-like occurrence) up to an additional 87,661 deaths</i></p>	<p><i>An influenza pandemic will result in waves of mass fatalities sustained over extended periods of time without geographic concentration (e.g., non-scene based.) Given the enormous and concurrent need for resources over wide geographic areas combined with staffing shortages of essential service employees, mass fatality planning for PI is unlike any prior disaster planning endeavor. “A pandemic is not like a hurricane or an earthquake, where resources and help can be shifted from one area to another. Should it occur, every community will need to rely on its own planning and its own resources as it fights the outbreak.” – DHHS Secretary Michael Leavitt, 2006</i></p> <p><i>Based on CDC FluAid 2.0 software calculations using a 35% attack rate and Ohio 2005 population estimates, a mild case Pandemic Influenza scenario (1968 occurrence) could produce up to an additional 10,666 deaths and a worst case scenario (1918-like occurrence) up to an additional 87,661 deaths</i></p>
	<p><i>Note: Fatality Management is a Target Capability within the National Preparedness Guidelines (USDHS, Target Capabilities List, September 2007). Fatality Management is defined as: “The capability to effectively perform</i></p>	<p><i>Note: Fatality Management is a Target Capability within the National Preparedness Guidelines (USDHS, Target Capabilities List, September 2007). Fatality Management is defined as: “The capability to effectively perform</i></p>	<p><i>Note: Fatality Management is a Target Capability within the National Preparedness Guidelines (USDHS, Target Capabilities List, September 2007). Fatality Management is defined as: “The capability to effectively perform</i></p>

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
	<i>scene documentation; the complete collection and recovery of the dead, victim's personal effects, and items of evidence; transportation, storage, documentation, and recovery of forensic and physical evidence; identification of the fatalities using scientific means; certification of the cause and manner of death; processing and returning of human remains and personal effects of the victims to the legally authorized person(s); and interaction with and provision of legal, customary, compassionate, and culturally competent required services to the families of deceased within the context of the family assistance center." p. 519</i>	<i>scene documentation; the complete collection and recovery of the dead, victim's personal effects, and items of evidence; transportation, storage, documentation, and recovery of forensic and physical evidence; identification of the fatalities using scientific means; certification of the cause and manner of death; processing and returning of human remains and personal effects of the victims to the legally authorized person(s); and interaction with and provision of legal, customary, compassionate, and culturally competent required services to the families of deceased within the context of the family assistance center." p. 519</i>	<i>scene documentation; the complete collection and recovery of the dead, victim's personal effects, and items of evidence; transportation, storage, documentation, and recovery of forensic and physical evidence; identification of the fatalities using scientific means; certification of the cause and manner of death; processing and returning of human remains and personal effects of the victims to the legally authorized person(s); and interaction with and provision of legal, customary, compassionate, and culturally competent required services to the families of deceased within the context of the family assistance center." p. 519</i>
Awareness of Current Guidelines Question 1	I am the lead agent for coordination of Mass Fatality Management (MFM) in my jurisdiction. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	I am the lead agent for coordination of Mass Fatality Management (MFM) in my jurisdiction. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	I am the lead agent for coordination of Mass Fatality Management (MFM) in my jurisdiction. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
Awareness of PI Implications Question 2	My agency has entered into Memorandums of Understanding (MOUs) within our Homeland Security Region (HLS Region) or is counting on	My agency has entered into Memorandums of Understanding (MOUs) within our Homeland Security Region (HLS Region) or is counting on	My agency has entered into Memorandums of Understanding (MOUs) within our Homeland Security Region (HLS Region) or is counting on

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
<p>Concept of Catastrophic Mass Fatality</p> <p>Question 3</p>	<p>neighboring/regional help during MFM related to Pandemic Influenza (PI).</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree <p>Although MFM operations occur at the local level, my jurisdiction is a part of planning and response at the Regional HLS level.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>neighboring/regional help during MFM related to Pandemic Influenza (PI).</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree <p>Although MFM operations occur at the local level, my jurisdiction is a part of planning and response at the Regional HLS level.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>neighboring/regional help during MFM related to Pandemic Influenza (PI).</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree <p>Although MFM operations occur at the local level, my jurisdiction is a part of l planning and response at the Regional HLS level.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
<p>What Does Unified Command in Mass Fatality Look Like at the Local Level?</p> <p>Ideal Partnerships</p> <p>Question 4</p>	<p>The following partners <u>should be</u> involved in Mass Fatality Management (MFM) within my jurisdiction:</p> <ol style="list-style-type: none"> 1. Health department 2. Emergency management agency 	<p>The following partners <u>should be</u> involved in Mass Fatality Management (MFM) within my jurisdiction:</p> <ol style="list-style-type: none"> 1. Health department 2. Emergency management agency 	<p>The following partners <u>should be</u> involved in Mass Fatality Management (MFM) within my jurisdiction:</p> <ol style="list-style-type: none"> 1. Health department 2. Emergency management agency

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
Existing Partnerships Question 5	3. Funeral directors 4. County coroner 5. Mental health 6. Other (please list all) <i>Note: Actual jurisdictional partnering involves meetings within the last year or published joint planning documents or annexes specific to MFM.</i> The following partners <u>are</u> involved in MFM within my jurisdiction: 1. Health department 2. Emergency management agency 3. Funeral directors 4. County coroner 5. Mental health 6. Other (please list all)	3. Funeral directors 4. County coroner 5. Mental health 6. Other (please list all) <i>Note: Actual jurisdictional partnering involves meetings within the last year or published joint planning documents or annexes specific to MFM.</i> The following partners <u>are</u> involved in MFM within my jurisdiction: 1. Health department 2. Emergency management agency 3. Funeral directors 4. County coroner 5. Mental health 6. Other (please list all)	3. Funeral directors 4. County coroner 5. Mental health 6. Other (please list all) <i>Note: Actual jurisdictional partnering involves meetings within the last year or published joint planning documents or annexes specific to MFM.</i> The following partners <u>are</u> involved in MFM within my jurisdiction: 1. Health department 2. Emergency management agency 3. Funeral directors 4. County coroner 5. Mental health 6. Other (please list all)
Who's in Charge? Question 6	The lead agent for the <u>command and control</u> of MFM during an incident affecting my jurisdiction is the: 1. Health department 2. Emergency management agency 3. Funeral directors	The lead agent for <u>command and control</u> of MFM during an incident affecting my jurisdiction is the: 1. Health department 2. Emergency management agency 3. Funeral directors 4. County coroner	The lead agent for <u>command and control</u> of MFM during an incident affecting my jurisdiction is the: 1. Health department 2. Emergency management agency 3. Funeral directors 4. County coroner

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
Who's Coordinating? Question 7	4. County coroner 5. Unified Command with multiple leads 6. Other (please list) The lead agent for MFM <u>coordination</u> in my jurisdiction is the: 1. Health department 2. Emergency management agency 3. Funeral directors 4. County coroner 5. Mental health 6. Other (please list)	5. Unified Command with multiple leads 6. Other (please list) The lead agent for MFM <u>coordination</u> in my jurisdiction is the: 1. Health department 2. Emergency management agency 3. Funeral directors 4. County coroner 5. Mental health 6. Other (please list)	5. Unified Command with multiple leads 6. Other (please list) The lead agent for MFM <u>coordination</u> in my jurisdiction is the: 1. Health department 2. Emergency management agency 3. Funeral directors 4. County coroner 5. Mental health 6. Other (please list)
Relationships Question 8	I am confident that I can work with my jurisdictional partners to accomplish MFM planning, response, and recovery. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	I am confident that I can work with my jurisdictional partners to accomplish MFM planning, response, and recovery. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	I am confident that I can work with my jurisdictional partners to accomplish MFM planning, response, and recovery. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
Question 9	Mass fatalities related to Pandemic Influenza (PI) should be considered coroner's cases.	Mass fatalities related to Pandemic Influenza (PI) should be considered coroner's cases.	Mass fatalities related to Pandemic Influenza (PI) should be considered coroner's cases.

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
<p>What Does Coordination and Guidance for Mass Fatality Management Look Like at the State Level?</p> <p>Awareness of Current Guidelines</p> <p>Question 10</p>	<ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
	<p>I have read or have access to Ohio's Acute Mass Fatalities Incident Response Plan released in May 2007 (Tab D to Emergency Support Function #8 Public Health and Medical Services).</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>I have read or have access to Ohio's Acute Mass Fatalities Incident Response Plan released in May 2007 (Tab D to Emergency Support Function #8 Public Health and Medical Services).</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>I have read or have access to Ohio's Acute Mass Fatalities Incident Response Plan released in May 2007 (Tab D to Emergency Support Function #8 Public Health and Medical Services).</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
Question 11 Who's coordinating?	I am confident that Ohio's Acute Mass Fatalities Incident Response Plan can guide my jurisdiction's response to MFM in Pandemic Influenza. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree The lead agent for MFM <u>coordination</u> at the state level is the:	I am confident that Ohio's Acute Mass Fatalities Incident Response Plan can guide my jurisdiction's response to MFM in Pandemic Influenza. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree The lead agent for MFM <u>coordination</u> at the state level is the:	I am confident that Ohio's Acute Mass Fatalities Incident Response Plan can guide my jurisdiction's response to MFM in Pandemic Influenza. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree The lead agent for MFM <u>coordination</u> at the state level is the:
Question 12 Relationships	1. Health department 2. Emergency management agency 3. Funeral directors 4. County coroner 5. Mental health 6. Other (please list)	1. Health department 2. Emergency management agency 3. Funeral directors 4. County coroner 5. Mental health 6. Other (please list)	1. Health department 2. Emergency management agency 3. Funeral directors 4. County coroner 5. Mental health 6. Other (please list)
Question 13	I am confident that the state partners can work together to accomplish needed guidance for MFM planning, response, and recovery. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree	I am confident that the state partners can work together to accomplish needed guidance for MFMplanning, response, and recovery. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree	I am confident that the state partners can work together to accomplish needed guidance for MFM planning, response, and recovery. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
Question 14 MFM Scene Operations, Morgue Operations Question 15	4. Agree 5. Strongly agree I am confident that Ohio can bring regional and state consistency to MFM through the planning process. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	4. Agree 5. Strongly agree I am confident that Ohio can bring regional and state consistency to MFM through the planning process. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	4. Agree 5. Strongly agree I am confident that Ohio can bring regional and state consistency to MFM through the planning process. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
	The funeral industry in my jurisdiction has access to (BREAK OUT EACH OF THE FOLLOWING ITEMS FOR SEPARATE RESPONSE) [labor, supplies, personal protective equipment, vaccines, fuel, raw materials, communication bandwidth, transportation, and security and other resources] to become a first responder in an	My agency is prepared to assist the funeral industry in my jurisdiction obtain access to (BREAK OUT EACH OF THE FOLLOWING ITEMS FOR SEPARATE RESPONSE) [labor, supplies, personal protective equipment, vaccines, fuel, raw materials, communication bandwidth, transportation, and security and other resources] to become a first	My agency is prepared to assist the funeral industry in my jurisdiction obtain access to (BREAK OUT EACH OF THE FOLLOWING ITEMS FOR SEPARATE RESPONSE) [labor, supplies, personal protective equipment, vaccines, fuel, raw materials, communication bandwidth, transportation, and security and other resources] to become a first

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
Question	<p>MFM.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree <p>16. My jurisdiction has pre-identified community-based collection points and morgues that meet temperature requirements.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>responder in an MFM.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>responder in an MFM.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
Question	<p>17. My jurisdiction has organized and trained volunteers from the community to assist with and support MFM.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>16. My jurisdiction has organized and trained volunteers from the community to assist with and support MFM.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>16. My jurisdiction has organized and trained volunteers from the community to assist with and support MFM.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
Question	<p>18. My jurisdiction has established simple, uniform procedures to request critical assistance from the state to expedite obtaining people,</p>	<p>17. My jurisdiction has established simple, uniform procedures to request critical assistance from the state to expedite obtaining people,</p>	<p>17. My jurisdiction has established simple, uniform procedures to request critical assistance from the state to expedite obtaining people,</p>

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
Question	<p>supplies, equipment, and/or operational assistance.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree <p>19. I am confident that my office can facilitate and provide oversight assurance in mass fatality to pronounce death, determine the cause and manner of death, complete death certificates, and establish victim identity.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>supplies, equipment, and/or operational assistance.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>supplies, equipment, and/or operational assistance.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree <p>18. I am confident that my agency can complete death certificates and accompanying burial/provisional or cremation permits through the Electronic Death Registration System in mass fatality.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
Question	<p>20. I am confident that my jurisdiction has viable plans to augment existing morgue space for an extended time period.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>18. I am confident that my jurisdiction has viable plans to augment existing morgue space for an extended time period.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
Question	<p>21. My office has a stockpile of critical supplies to support MFM operations for 10 days.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>19. My jurisdiction has access to a stockpile of critical supplies to support MFM operations for 10 days.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	
Question	<p>22. My office has agreements in place to ensure that MFM operations are supported by priority distribution of water, generators, and gasoline.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>20. My jurisdiction has agreements in place to ensure that MFM operations are supported by a priority distribution of water, generators, and gasoline.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	
Question		<p>21. My jurisdiction has explored strategies to augment transportation of human remains during MFM.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
Question		<p>22. My jurisdiction's Citizen's Corps is a viable source of volunteers for MFM .</p> <p>1. Strongly disagree</p> <p>2. Disagree</p> <p>3. Neither agree nor disagree</p> <p>4. Agree</p> <p>5. Strongly agree</p>	<p>19. My jurisdiction's Citizen's Corps is a viable source of volunteers for MFM .</p> <p>1. Strongly disagree</p> <p>2. Disagree</p> <p>3. Neither agree nor disagree</p> <p>4. Agree</p> <p>5. Strongly agree</p>
Question		<p>23. My jurisdiction's Medical Reserve Corps is a viable source to expand subject matter expertise and bolster MFM.</p> <p>1. Strongly disagree</p> <p>2. Disagree</p> <p>3. Neither agree nor disagree</p> <p>4. Agree</p> <p>5. Strongly agree</p>	<p>20. My jurisdiction's Medical Reserve Corps is a viable source to expand subject matter expertise and bolster MFM.</p> <p>1. Strongly disagree</p> <p>2. Disagree</p> <p>3. Neither agree nor disagree</p> <p>4. Agree</p> <p>5. Strongly agree</p>
Final Disposition in Mass Fatality			
Question	<p>23. My jurisdiction has addressed the expected surge in morgue and funeral capacity by defining standard protocols for handling, processing securing, and disposing</p>	<p>24. My jurisdiction has addressed the expected surge in morgue and funeral capacity by defining standard protocols for handling, processing securing, and disposing</p>	<p>21. My jurisdiction has addressed the expected surge in morgue and funeral capacity by defining standard protocols for handling, processing securing, and disposing</p>

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
	<p>of large numbers of remains in a respectful and dignified manner.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>of large numbers of remains in a respectful and dignified manner.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p>of large numbers of remains in a respectful and dignified manner.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
<p><i>The note is inserted to validate that mass burials and cremations are “on the books” in Ohio.</i></p> <p>Question</p>	<p><i>Note: Ohio Revised Code Sec 4717.13 dictates identification methods (e.g., tags and data) to be used in carrying out mass burials and cremations.</i></p> <p>24. My jurisdiction has pre-identified possible mass burial sites (temporary) or cremation arrangements.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p><i>Note: Ohio Revised Code Sec 4717.13 dictates identification methods (e.g., tags and data) to be used in carrying out mass burials and cremations.</i></p> <p>25. My jurisdiction has pre-identified possible mass burial sites (temporary) or cremation arrangements.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 	<p><i>Note: Ohio Revised Code Sec 4717.13 dictates identification methods (e.g., tags and data) to be used in carrying out mass burials and cremations.</i></p> <p>22. My jurisdiction has pre-identified possible mass burial sites (temporary) or cremation arrangements.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree <p>23. I am confident that my agency can process and track disposition of fatalities through the Electronic Death Registration System (EDRS) during MFM.</p> <ol style="list-style-type: none"> 1. Strongly disagree 2. Disagree
<p>Question</p>			

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
<p>Family Assistance in Mass Fatality</p> <p>Question</p>		<p><i>Note: The use of a family assistance center in an environment of communicable disease and social distancing may not be feasible.</i></p> <p>26. My jurisdiction is planning to implement supportive capabilities for families and communities that are flexible and appropriate to a communicable disease environment (i.e., virtual family support centers.)</p> <p>1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree</p>	<p>3. Neither agree nor disagree 4. Agree 5. Strongly agree</p> <p><i>Note: The use of a family assistance center in an environment of communicable disease and social distancing may not be feasible.</i></p> <p>24. My jurisdiction is planning to implement supportive capabilities for families and communities that are flexible and appropriate to a communicable disease environment (i.e., virtual family support centers.)</p> <p>1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree</p>
<p>Question</p>		<p>27. My jurisdiction has collected and/or prepared emergency public information and educational information related to MFM that will reduce disease exposure and protect families.</p>	<p>25. My jurisdiction has collected and/or prepared emergency public information and educational information related to MFM that will reduce disease exposure and protect families.</p>

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
Question		1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 28. My jurisdiction has explored interventions and strategies regarding special populations as related to MFM (e.g., those with mental or behavioral illness or disabilities.)	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree 26. My jurisdiction has explored interventions and strategies regarding special populations as related to MFM (e.g., those with mental or behavioral illness or disabilities.)
Communication Question	25. I am confident that there are clear lines of communication and authority at the local, regional, and state levels to ensure the best possible outcome in MFM. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	29. I am confident that there are clear lines of communication and authority at the local, regional, and state levels to ensure the best possible outcome in MFM. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	27. I am confident that there are clear lines of communication and authority at the local, regional, and state levels to ensure the best possible outcome in MFM. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
Question	26. Government leaders and public information officers in my jurisdiction are prepared to deliver	30. Government leaders and public information officers in my jurisdiction are prepared to deliver	28. Government leaders and public information officers in my jurisdiction are prepared to deliver

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
	honest and timely information to the community during MFM – before, during, and after the incident. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	honest and timely information to the community during MFM – before, during, and after the incident. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree	honest and timely information to the community during MFM – before, during, and after the incident. 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
Identification of Gaps in MFM Planning and Operations	27. The best thing my jurisdiction has going in terms of Mass Fatality Management is: [text box]	31. The best thing my jurisdiction has going in terms of Mass Fatality Management is: [text box]	29. The best thing my jurisdiction has going in terms of Mass Fatality Management is: [text box]
Question			
Question	28. The thing that worries me the most in terms of MFM is: [text box]	32. The thing that worries me the most in terms of MFM in my jurisdiction is: [text box]	30. The thing that worries me the most in terms of MFM is: [text box]
DEMOGRAPHIC INFO	30. Years in Position [<5, 6-10, 11-20, 21+]	34. Years in Position [<5, 6-10, 11-20, 21+]	32. Years in Position [<5, 6-10, 11-20, 21+]
Question			
Question			33. Health Department Type [City, County, Combined]

TOPICS for COVERAGE	COUNTY CORONER GROUP	COUNTY EMERGENCY MANAGER GROUP	COUNTY and CITY HEALTH COMMISSIONER GROUP
Question	31. Professional Identification [Physician, Other (List)]	35. Professional Identification [Fire, Law Enforcement, City Planner, Other (List)]	34. Professional Identification <i>Check all that apply.</i> [Physician, Dentist, Veterinarian, Nurse, Sanitarian, MPH, Other (List)]
Question	32. Age [20-35, 36-50, 51-65, 65+]	36. Age [20-35, 36-50, 51-65, 65+]	35. Age [20-35, 36-50, 51-65, 65+]
Question	33. HLS Region [NW, NE, SE1, SE2, SW, WC, Central]	37. HLS Region [NW, NE, SE1, SE2, SW, WC, Central]	36. HLS Region [NW, NE, SE1, SE2, SW, WC, Central]
ADDITIONAL COMMENTS	34. ADDITIONAL COMMENTS [text box]	38. ADDITIONAL COMMENTS [text box]	37. <i>ADDITIONAL COMMENTS</i> [text box]
Thank you message for End of Survey	Thank you for completing the survey!	Thank you for completing the survey!	Thank you for completing the survey!

E. SURVEY COMMO EX - PRE-SURVEY NOTICE – INVITE

Dear Health Commissioners, County Coroners, and Emergency Management Directors,

As part of our state's efforts to build mass fatality management capabilities, you'll receive an email invitation to participate in the *Mass Fatality Management in Catastrophic Surge Survey* on Wednesday, March 12. The Ohio Center for Public Health Preparedness (OCPHP) in the Office of Workforce Development at OSU is conducting the survey. It will identify current gaps in Ohio's capability for fatality management, ultimately identifying actions needed to sustain regional mass fatality capability in Ohio. The survey is funded by the CDC Cooperative Agreement with Centers for Public Health Preparedness 07-08.

Who, What, Why:

The Mass Fatality Management survey is a 30-35 item survey that addresses the following areas: Definition, Command and Control, Coordination, Scene Operations, Morgue Operations, Final Disposition, Family Assistance, and Communication. The survey will obtain health commissioner, emergency management director, and county coroner opinions on mass fatality management. Three separate surveys with a common core of questions and several discipline-specific items will measure opinions and perceptions. There are no "right" or "wrong" responses. The information will be used in future planning; specifically, in ways to manage death surge and build relationships with all mass fatality stakeholders and citizens-at-large.

How:

Your survey invitation will contain a link that you may click or copy and paste into your browser. This link will take you to the survey website where you'll complete the questions. Please be as honest as possible when completing the survey. Your responses are completely confidential and cannot be tracked. We have blocked collection of respondent IP addresses and email addresses to ensure complete anonymity.

Survey results will be communicated through your respective organizations during the month of June. In addition, OCPHP-OWD will continue to work with regions to develop operations and targeted action plans addressing key issues that the survey identifies no later than August. If you have any questions about the Mass Fatality Management Survey, feel free to contact me per my information below.

Thank you for your time and consideration in advance,

Sharon A. R. Stanley, PhD, RN, RS

Ohio Center for Public Health Preparedness
Office of Workforce Development, CPH, OSU
1212 Kinnear Rd. Columbus, OH 43212
614.292.5524 ssstanley@cph.osu.edu

F. SURVEY COMMO EX – REMINDER

Dear County Coroner,

REMINDER - 5 DAYS TO GO

Thanks to all participants who have already completed the survey.

If you have not yet done so, please go online and complete the **Mass Fatality Management** survey.

[Link to County Coroner Survey](#)

It takes less than 20-30 minutes, and your voice will be heard. **Your responses are completely confidential and cannot be tracked.**

Sharon A. R. Stanley, PhD, RN, RS

Ohio Center for Public Health Preparedness
Office of Workforce Development, CPH, OSU
1212 Kinnear Rd. Columbus, OH 43212
614.292.5524 ssstanley@cph.osu.edu

G. SURVEY COMMO EX – FINAL NOTICE

Last Chance – **Your** Opinion Counts! SURVEY OPEN UNTIL **MARCH 31st**

Thanks to all participants who have already completed the survey.

If you have not yet done so, please go online and complete the County Emergency Manager **Mass Fatality Management** Survey. It takes less than 20-30 minutes. Your responses are completely confidential and cannot be tracked (*which is why you are receiving this reminder notice even if you have already completed the survey.*)

[Link to County Emergency Manager Survey](#)

Here is the County Emergency Manager response breakdown to date per Homeland Security Region.

Homeland Security Region	Survey Participation Percentage
Southeast 2	60%
Central	53.3%
NECO	50%
Southwest	37.5%
Southeast 1	27.3%
West Central	25%
Northwest	16.7%
Northeast	0%
TOTAL PARTICIPATION	42%

P.s. Congratulations Emergency Managers, your group has the highest response rate of the three groups being collected! Keep it up!!

Sharon A. R. Stanley, PhD, RN, RS

Ohio Center for Public Health Preparedness
Office of Workforce Development, CPH, OSU
1212 Kinnear Rd. Columbus, OH 43212
614.292.5524 ssstanley@cph.osu.edu

APPENDIX B. SELECT SURVEY RESPONSES

A. SELECT CORONER SURVEY RESPONSES

Appendix B: Select Coroner Survey Responses

1

APPENDIX B: SELECT CORONER RESPONSES - *Regional Mass Fatality Management in Catastrophe Surge Survey: County Coroners*

General Awareness, Command-Control, and Coordination

Questions 1 – 14

4. The following partners should be involved in MFM within my jurisdiction:						
	Health department	Emergency management agency	Funeral directors	County coroner	Mental Health	Response Count
Partners who should be involved (please choose all that apply)	100.0% (30)	93.3% (28)	100.0% (30)	100.0% (30)	63.3% (19)	30

5. The following partners are involved in MFM within my jurisdiction:						
	Health department	Emergency management agency	Funeral directors	County coroner	Mental health	Response Count
Partners actually involved in MFM (please choose all that apply)	100.0% (29)	86.2% (25)	79.3% (23)	93.1% (27)	37.9% (11)	29

6. The lead agent for command and control of MFM during an incident affecting my jurisdiction is the:						
	Health department	Emergency management agency	Funeral directors	County coroner	Unified Command with multiple leads	Response Count
Local command and control during MFM	16.7% (5)	23.3% (7)	0.0% (0)	26.7% (8)	33.3% (10)	30

7. The lead agent for MFM coordination in my jurisdiction is the:						
	Health department	Emergency management agency	Funeral directors	County coroner	Mental health	Response Count
Local coordination lead during MFM	23.3% (7)	53.3% (16)	0.0% (0)	23.3% (7)	0.0% (0)	30

9. Mass fatalities related to Pandemic Influenza (PI) should be considered coroner's cases.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
PI fatalities considered coroner's cases	6.7% (2)	30.0% (9)	30.0% (9)	26.7% (8)	6.7% (2)	30

12. The lead agent for MFM coordination at the state level is the:					
	Ohio Department of Health	Ohio Emergency Management Agency	Ohio Funeral Directors Association	Ohio State Coroners Association	Response Count
State coordination during MFM	26.7% (8)	56.7% (17)	6.7% (2)	10.0% (3)	30

13. I am confident that the state partners can work together to accomplish needed guidance for MFM planning, response, and recovery.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Confidence in state partners ability to work together	0.0% (0)	16.7% (5)	40.0% (12)	36.7% (11)	6.7% (2)	30

Current MFM Planning and Operations

Questions 15 – 26

15. The funeral industry in my jurisdiction has access to each of these resource categories so it can provide first response during a MFM.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Labor	3.3% (1)	20.0% (6)	26.7% (8)	46.7% (14)	3.3% (1)	30
Supplies	3.3% (1)	20.0% (6)	30.0% (9)	40.0% (12)	6.7% (2)	30
Personal protective equipment	10.0% (3)	26.7% (8)	43.3% (13)	16.7% (5)	3.3% (1)	30
Vaccines	26.7% (8)	36.7% (11)	30.0% (9)	3.3% (1)	3.3% (1)	30
Fuel	10.0% (3)	20.0% (6)	53.3% (16)	13.3% (4)	3.3% (1)	30
Raw materials	10.0% (3)	16.7% (5)	50.0% (15)	16.7% (5)	6.7% (2)	30
Communication bandwidth	20.0% (6)	16.7% (5)	46.7% (14)	10.0% (3)	6.7% (2)	30
Transportation	0.0% (0)	10.0% (3)	36.7% (11)	46.7% (14)	6.7% (2)	30
Security	20.7% (6)	20.7% (6)	31.0% (9)	20.7% (6)	6.9% (2)	29

23. My jurisdiction has addressed the expected surge in morgue and funeral capacity by defining standard protocols for handling, processing, securing, and disposing of large numbers of remains in a respectful and dignified manner.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Protocol for surge in place	3.3% (1)	36.7% (11)	33.3% (10)	23.3% (7)	3.3% (1)	30

24. My jurisdiction has pre-identified possible mass burial sites (temporary) or cremation arrangements.

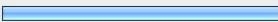

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Temporary mass burial sites or cremation identified	6.7% (2)	40.0% (12)	26.7% (8)	20.0% (6)	6.7% (2)	30

25. I am confident that there are clear lines of communication and authority at the local, regional, and state levels to ensure the best possible outcome in MFM.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Confidence in communication and authority	16.7% (5)	10.0% (3)	33.3% (10)	30.0% (9)	10.0% (3)	30

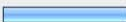

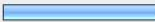

Perceptions of Operational Strengths, Weaknesses and Barriers


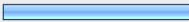

Questions 27 – 29

29. The biggest barrier to successful MFM in my jurisdiction falls into the following category:			
		Response Percent	Response Count
Financial		69.2%	18
Legal		0.0%	0
Organizational		30.8%	8

Demographics

Questions 27 – 34

30. Years in Position			
		Response Percent	Response Count
<5 years		31.0%	9
6-10 years		10.3%	3
11-20 years		37.9%	11
21+ years		20.7%	6

32. Age			
		Response Percent	Response Count
20-35		0.0%	0
36-50		35.7%	10
51-65		46.4%	13
65+		17.9%	5

B. SELECT EMD SURVEY RESPONSES

Appendix B: Select Emergency Management Survey Responses

1

APPENDIX B: SELECT EMERGENCY MANAGEMENT RESPONSES - *Regional Mass Fatality Management in Catastrophe Surge Survey: Emergency Management Directors*

General Awareness, Command-Control, and Coordination

Questions 1 – 14

1. My agency is the lead for coordination of Mass Fatality Management (MFM) in my jurisdiction.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Response Count
Lead agency status	12.5% (5)	32.5% (13)	30.0% (12)	17.5% (7)	7.5% (3)	40

4. The following partners should be involved in MFM within my jurisdiction:						
	Health department	Emergency management agency	Funeral directors	County coroner	Mental Health	Response Count
Partners who should be involved (please choose all that apply)	97.4% (38)	97.4% (38)	100.0% (39)	97.4% (38)	92.3% (36)	39

5. The following partners are involved in MFM within my jurisdiction: (choose all that apply)						
	Health department	Emergency management agency	Funeral directors	County coroner	Mental health	Response Count
Partners actually involved in MFM	89.2% (33)	91.9% (34)	56.8% (21)	75.7% (28)	56.8% (21)	37

6. The lead agency for the command and control of MFM during an incident affecting my jurisdiction is the:						
	Health department	Emergency management agency	Funeral directors	County coroner	Unified Command with multiple leads	Response Count
Local command and control during MFM	10.5% (4)	7.9% (3)	0.0% (0)	36.8% (14)	44.7% (17)	38

7. The lead agency for MFM coordination in my jurisdiction is the:						
	Health department	Emergency management agency	Funeral directors	County coroner	Mental health	Response Count
Local coordination lead during MFM	29.7% (11)	27.0% (10)	2.7% (1)	40.5% (15)	0.0% (0)	37

11. I am confident that Ohio's Acute Mass Fatalities Incident Response Plan can guide my jurisdiction's response to MFM in PI.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Confidence in Ohio's Acute Mass Fatality Plan for local guidance in PI	0.0% (0)	10.5% (4)	55.3% (21)	34.2% (13)	0.0% (0)	38

13. I am confident that the state partners can work together to accomplish needed guidance for MFM planning, response, and recovery.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Confidence in state partners ability to work together	10.5% (4)	18.4% (7)	31.6% (12)	36.8% (14)	2.6% (1)	38

Current MFM Planning and Operations**Questions 15 – 30**

15. My agency is prepared to assist the funeral industry in my jurisdiction to obtain access to each of these resource categories so it can provide first response during a MFM.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Labor	2.7% (1)	13.5% (5)	21.6% (8)	54.1% (20)	8.1% (3)	37
Supplies	2.7% (1)	5.4% (2)	21.6% (8)	62.2% (23)	8.1% (3)	37
Personal protective equipment	2.7% (1)	5.4% (2)	13.5% (5)	64.9% (24)	13.5% (5)	37
Vaccines	13.9% (5)	19.4% (7)	33.3% (12)	27.8% (10)	5.6% (2)	36
Fuel	5.6% (2)	8.3% (3)	19.4% (7)	58.3% (21)	8.3% (3)	36
Raw materials	2.8% (1)	11.1% (4)	38.9% (14)	38.9% (14)	8.3% (3)	36
Communication bandwidth	2.6% (1)	7.9% (3)	15.8% (6)	57.9% (22)	15.8% (6)	38
Transportation	2.8% (1)	5.6% (2)	22.2% (8)	63.9% (23)	5.6% (2)	36
Security	8.3% (3)	8.3% (3)	27.8% (10)	50.0% (18)	5.6% (2)	36

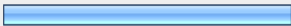
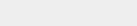

19. My jurisdiction has access to a stockpile of critical supplies to support MFM operations for 10 days.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Stockpile access to 10 days of critical supplies	10.5% (4)	42.1% (16)	31.6% (12)	13.2% (5)	2.6% (1)	38

24. My jurisdiction has addressed the expected surge in morgue and funeral capacity by defining standard protocols for handling, processing, securing, and disposing of large numbers of remains in a respectful and dignified manner.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Protocol for surge in place	5.3% (2)	23.7% (9)	39.5% (15)	28.9% (11)	2.6% (1)	38


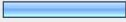
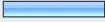

26. My jurisdiction is planning to implement supportive capabilities for families and communities that are flexible and appropriate to a communicable disease environment (i.e., virtual family support centers).						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Virtual family support center concept considered	7.9% (3)	21.1% (8)	39.5% (15)	28.9% (11)	2.6% (1)	38



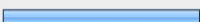

29. I am confident that there are clear lines of communication and authority at the local, regional, and state levels to ensure the best possible outcome in MFM.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Confidence in communication and authority	5.3% (2)	28.9% (11)	28.9% (11)	31.6% (12)	5.3% (2)	38

Perceptions of Operational Strengths, Weaknesses and Barriers
Questions 31 – 33

33. The biggest barrier to successful MFM in my jurisdiction falls into the following category:			
		Response Percent	Response Count
Financial		68.8%	22
Legal		0.0%	0
Organizational		31.3%	10

Demographics
Questions 34 – 38

34. Years in Position			
		Response Percent	Response Count
<5 years		33.3%	12
6-10 years		30.6%	11
11-20 years		25.0%	9
21+ years		11.1%	4

36. Age			
		Response Percent	Response Count
20-35		8.1%	3
36-50		40.5%	15
51-65		48.6%	18
65+		2.7%	1

C. SELECT HEALTH COMM SURVEY RESULTS

Appendix B: Select Health Commissioner Survey Responses

1

APPENDIX B: SELECT HEALTH COMMISSIONER RESPONSES - *Regional Mass Fatality Management in Catastrophe Surge Survey: Health Commissioners*

General Awareness, Command-Control, and Coordination

Questions 1 – 14

1. My agency is the lead for coordination of Mass Fatality Management (MFM) in my jurisdiction.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Response Count
Lead agency status	20.9% (14)	35.8% (24)	11.9% (8)	22.4% (15)	9.0% (6)	67

4. The following partners should be involved in MFM within my jurisdiction:						
	Health department	Emergency management agency	Funeral directors	County coroner	Mental Health	Response Count
Partners who should be involved (please choose all that apply)	97.0% (64)	98.5% (65)	100.0% (66)	98.5% (65)	89.4% (59)	66

5. The following partners are involved in MFM within my jurisdiction: (choose all that apply)						
	Health department	Emergency management agency	Funeral directors	County coroner	Mental health	Response Count
Partners actually involved in MFM	90.0% (54)	91.7% (55)	65.0% (39)	78.3% (47)	46.7% (28)	60

6. The lead agency for the command and control of MFM during an incident affecting my jurisdiction is the:						
	Health department	Emergency management agency	Funeral directors	County coroner	Unified Command with multiple leads	Response Count
Local command and control during MFM	9.5% (6)	27.0% (17)	3.2% (2)	25.4% (16)	34.9% (22)	63

7. The lead agency for MFM coordination in my jurisdiction is the:						
	Health department	Emergency management agency	Funeral directors	County coroner	Mental health	Response Count
Local coordination lead during MFM	24.6% (15)	42.6% (26)	0.0% (0)	32.8% (20)	0.0% (0)	61

9. Mass fatalities related to Pandemic Influenza (PI) should be considered coroner's cases.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
PI fatalities considered coroner's cases	0.0% (0)	25.4% (17)	43.3% (29)	23.9% (16)	7.5% (5)	67

12. The lead agency for MFM coordination at the state level is the:					
	Ohio Department of Health	Ohio Emergency Management Agency	Ohio Funeral Directors Association	Ohio State Coroners Association	Response Count
State coordination during MFM	37.5% (21)	32.1% (18)	8.9% (5)	21.4% (12)	56

Current MFM Planning and Operations**Questions 15 – 28**

15. My agency is prepared to assist the funeral industry in my jurisdiction to obtain access to each of these resource categories so it can provide first response during a MFM.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Labor	12.1% (8)	34.8% (23)	15.2% (10)	34.8% (23)	3.0% (2)	66
Supplies	13.8% (9)	33.8% (22)	21.5% (14)	27.7% (18)	3.1% (2)	65
Personal protective equipment	9.1% (6)	22.7% (15)	19.7% (13)	43.9% (29)	4.5% (3)	66
Vaccines	3.0% (2)	0.0% (0)	13.6% (9)	63.6% (42)	19.7% (13)	66
Fuel	31.8% (21)	48.5% (32)	13.6% (9)	4.5% (3)	1.5% (1)	66
Raw materials	27.3% (18)	48.5% (32)	15.2% (10)	7.6% (5)	1.5% (1)	66
Communication bandwidth	10.8% (7)	26.2% (17)	20.0% (13)	36.9% (24)	6.2% (4)	65
Transportation	26.2% (17)	40.0% (26)	16.9% (11)	15.4% (10)	1.5% (1)	65
Security	27.7% (18)	47.7% (31)	12.3% (8)	10.8% (7)	1.5% (1)	65

16. My jurisdiction has organized and trained volunteers from the community to assist with and support MFM.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Response Count
Community volunteers organized and trained	10.6% (7)	42.4% (28)	22.7% (15)	19.7% (13)	4.5% (3)	66

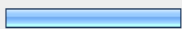

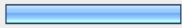
21. My jurisdiction has addressed the expected surge in morgue and funeral capacity by defining standard protocols for handling, processing, securing, and disposing of large numbers of remains in a respectful and dignified manner.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Protocol for surge in place	7.7% (5)	32.3% (21)	21.5% (14)	33.8% (22)	4.6% (3)	65

24. My jurisdiction is planning to implement supportive capabilities for families and communities that are flexible and appropriate to a communicable disease environment (i.e., virtual family support centers).						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Virtual family support center concept considered	3.0% (2)	22.7% (15)	50.0% (33)	22.7% (15)	1.5% (1)	66

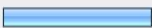
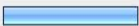


27. I am confident that there are clear lines of communication and authority at the local, regional, and state levels to ensure the best possible outcome in MFM.						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Response Count
Confidence in communication and authority	4.6% (3)	30.8% (20)	40.0% (26)	23.1% (15)	1.5% (1)	65

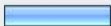

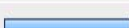
Perceptions of Operational Strengths, Weaknesses and Barriers



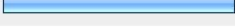
Questions 29 – 31

31. The biggest barrier to successful MFM in my jurisdiction falls into the following category:			
		Response Percent	Response Count
Financial		42.6%	23
Legal		14.8%	8
Organizational		42.6%	23

Demographics
Questions 32 – 37

32. Years in Position			
		Response Percent	Response Count
<5 years		34.4%	22
6-10 years		31.3%	20
11-20 years		18.8%	12
21+ years		15.6%	10

33. Health Department Type			
		Response Percent	Response Count
City		24.6%	16
County		46.2%	30
Combined		29.2%	19

35. Age			
		Response Percent	Response Count
20-35		3.2%	2
36-50		42.9%	27
51-65		54.0%	34
65+		0.0%	0

LIST OF REFERENCES

- Alben, T. P. (2007). *Compliance with community mitigation and interventions in pandemic influenza: A community policing strategy*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA.
- Assistant Secretary for Preparedness and Response (ASPR). (2007, November). *Pandemic and all-hazards preparedness act: Progress report public law 109-417*. Washington, DC: Department of Health and Human Services (HHS). Retrieved November 11, 2007, from www.hhs.gov/aspr/conference/pahpa/2007/pahpa-progress-report-102907.pdf
- Barbisch, D. (2006, June 6). *Components of surge: Validating the planning factors*. Presentation at the 9th Annual Emergency Management Higher Education Conference, Emmitsburg, MD. Retrieved June 10, 2008, from <http://www.training.fema.gov/emiweb/edu/06conf/06papers/Barbisch%20Donna%20-%20Surge%20Capacity.pdf>
- Bernett, P. M. (2007). Public health regionalization study: National overview. *Washington, D.C.: NACCHO*. Retrieved October 3, 2008, from <http://www.naccho.org/toolbox/tool.cfm?id=1424>
- California Department of Health Services. (2006). *Pandemic influenza preparedness and response plan: an annex to CDHS public health emergency response plan and procedures*. Sacramento, California: California Department of Health Services. Retrieved September 25, 2008, from <http://www.cdph.ca.gov/programs/immunize/Documents/pandemic.pdf>
- CDC. (2006, October 6). National center for health statistics: Fast stats A to Z. Retrieved September 16, 2007, from http://www.cdc.gov/nchs/fastats/popup_oh.htm
- CDC. (2007). *Interim pre-pandemic planning guidance: Community strategy for pandemic influenza mitigation in the United States*. Atlanta, Georgia: CDC. Retrieved June 10, 2008, from <http://www.pandemicflu.gov/plan/community/mitigation.html>
- Center for Biosecurity. (2008, May 2). Biosecurity briefing. Retrieved June 21, 2008, from http://www.upmc-biosecurity.org/website/biosecurity_briefing/archive/international_biosecurity/2008-05-02-iomantiviraldistribution.html
- Centers for Disease Control and Prevention (CDC). (2000, July). *FluAid 2.0*. Retrieved November 3, 2007, from www.hhs.gov/nvpo/pandemics/fluaid/default.htm

- Connolly, C. (2006, June 9). A grisly but essential issue: Pandemic plans skim over how to deal with many corpses. *The Washington Post*, p. A09. Retrieved November 2, 2007, from <http://www.washingtonpost.com/wp-dyn/content/article/2006/06/09/AR2006060900078.html>
- CPM Global Assurance. (2008, June 4). Survey: 40 percent of small businesses have no disaster preparedness plan. *Contingency Planning and Management*. Retrieved September 6, 2008, from <http://www.contingencyplanning.com/articles/63341/>
- Crime Reduction and Community Safety Group (CRCSG), Public Order Unit – Mass Fatalities Unit. (2007). *Planning for a possible influenza pandemic: A framework for planners preparing to manage deaths*. London, United Kingdom: The Home Office, Retrieved November 3, 2007, from http://www.dh.gov.uk/en/Consultations/Liveconsultations/DH_078056
- Cross, R. & Parker, A. (2004). *The hidden power of social networks: Understanding how work really gets done in organizations*. Boston, MA: Harvard Business School Press.
- Cutter, S. L. (2005). Preparing for emergencies. *Encyclopedia Britannica Online*. Retrieved November 14, 2007, from <http://www.britannica.com/eb/article-9432642/Preparing-for-Emergencies#250570.toc>
- Department of Health and Human Services (HHS). (2008a). *Pandemic planning update V: A report from Secretary Michael O. Leavitt*. Washington, D.C.: HHS. Retrieved June 6, 2008, from <http://www.pandemicflu.gov/plan/pdf/panflureport5.pdf>
- Department of Health and Human Services (HHS). (n.d.). State and local government planning and response activities. *Pandemicflu.gov*. Retrieved April 12, 2008, from <http://www.pandemicflu.gov/plan/states/index.html>
- Department of Homeland Security (DHS). (2004a). *National Response Plan*. Washington, D.C.: DHS.
- Devlin, S., Gavin, C., Lyle, B., & McGovern, J. (2006). *Morgue operations, identification, and command and control of mass fatalities resulting from a pandemic influenza event in the United States*. Colorado Springs, CO: NORTHCOM. Retrieved November 3, 2007, from www.icfa.org/pdf/white_paperMFM.pdf
- DHS. (2004b). Emergency support function #8 (ESF 8-1 ~ 8-13): Public health and medical. *National Response Plan*. Washington, D.C.: DHS.
- DHS. (2007a). *National Preparedness Guidelines*. Washington, D.C.: DHS. Retrieved November 2, 2007, from http://www.dhs.gov/xnews/releases/pr_1189720458491.shtm

- DHS. (2007b). Response mission: Fatality management. *Target capabilities list: A companion to the national preparedness guidelines*. Washington, D.C.: DHS. Retrieved October 2, 2008, from http://www.ema.ohio.gov/pdfs/Target_Capabilities/TCL_Fatality_Mgt_May_2008.pdf
- DHS. (2008a). Emergency support function #8 (ESF 8-1~8-16): Public health and medical. *National Response Framework*. Washington, D.C.: DHS. Retrieved February 15, 2007, from <http://www.fema.gov/pdf/emergency/nrf/nrf-esf-08.pdf>
- DHS. (2008b). *National Response Framework*. Washington, D.C.: DHS. Retrieved May 8, 2008, from <http://www.fema.gov/pdf/emergency/nrf/nrf-core.pdf>
- “Disaster Management.” *Terra Daily*. Retrieved November 14, 2007, from http://www.terradaily.com/reports/Mortuary_Teams_Start_New_Orleans_HouseToHouse_Search_For_Bodies.html
- Emergency Management Accreditation Program (EMAP). (2006). *A framework for assessing regional preparedness: A white paper on applying emergency preparedness standards to multijurisdictional areas*. Lexington, KY: EMAP. Retrieved June 12, 2008, from <http://www.emaponline.org/?256>
- Estrada, L., Lenihan, P., Shiu, A., Sutton, D. & Welter, C. (2007). *Planning beyond borders: Using Project Public Health Ready as regional planning guidance for local public health*. Washington, D.C.: NACCHO. Retrieved September 25, 2008, from http://www.naccho.org/topics/emergency/PPHR/upload/PPHR_Regional-Guidance_FINAL.pdf
- Federal Department Point of Contact Letter. Official communication from HHS. Retrieved June 5, 2008, from <http://www.pandemicflu.gov/plan/states/stateoperatingplanattach.html#template>
- Feinberg, J. (2008). WRDL Wordle. Retrieved August 25, 2008, from <http://wordle.net/>
- Fells, R. M. (2006, August-September). Flu reports: We’re not ready. *International Cemetery and Funeral Association Washington Report*. Retrieved September 25, 2008, from <http://www.icfa.org/washrpt08.09.06.htm>
- Florida Medical Examiner Commission. (2006). *Florida mass fatality response plan: Catastrophic incident response plan of the state comprehensive emergency management plan*. Tallahassee, FL: State of Florida, 2006. Retrieved November 3, 2007, from www.fdle.state.fl.us/cjst/mec/Publications/Fl%20Mass%20Fatality%20Plan.pdf
- Flynn, S. E. (2008). America the resilient: Defying terrorism and mitigating natural Disasters. *Foreign Affairs*, 87(2), 2-9. Retrieved June 13, 2008, from http://opim.wharton.upenn.edu/risk/library/J2008Foreign_Affairs_Flynn.pdf

- Garrett, L. (2005). The next pandemic? *Foreign Affairs*, 84(4), 1-21.
<http://www.foreignaffairs.org/20050701faessay84401/laurie-garrett/the-next-pandemic.html>
- Gerber, R. (2007, May 22). No longer taboo. *Government Technology's Emergency Management: Strategy and Leadership in Critical Times*. Retrieved November 2, 2007, from <http://www.govtech.com/em/articles/121134>
- Gerencser et al. (2007). *Megacommunities*. Retrieved August 18, 2008, from <http://megacommunities.com/26655021>
- Gerencser, M., Lee, R. V., Napolitano, F. & Kelly, C. (2008). *Megacommunities*. New York, NY: Palgrave MacMillan.
- Green, W. G. (2000). *Mass casualty incident management: The Virginia Model*. Retrieved September 25, 2008, from <http://facultystaff.richmond.edu/~wgreen/conf7.pdf>
- Gursky, E. A. on behalf of the Joint Task Force Civil Support Working Group on Mass Fatality. (2007, July). A working group consensus statement on mass-fatality planning for pandemics and disasters. *Journal of Homeland Security*. Retrieved September 25, 2008, from <http://www.homelandsecurity.org/journal/Default.aspx?oid=160&ocat=1>
- Hade, E. & Porter, K. (2006). [Morgue capacity estimation] Unpublished data from study conducted at The Ohio State University, Columbus, OH.
- Health Protection Agency. (2008). Exercise Winter Willow lessons identified. London, United Kingdom: Department of Health. Retrieved October 3, 2008, from http://www.ukresilience.gov.uk/~media/assets/www.ukresilience.info/winter_willow_lessons%20pdf.ashx
- Home Office. (2008). *Planning for a possible influenza pandemic: A framework for Planners preparing to manage deaths*. London, United Kingdom: The Home Office. Retrieved May 21, 2008, from http://www.ukresilience.gov.uk/news/manage_deaths_guidance2.aspx
- Inglesby, T. (2006, April 5). *Roundtable on all-hazards medical preparedness and Response* [Webstream]. Panel presentation for the Senate Subcommittee on Bioterrorism and Public Health Preparedness, Washington, D.C. Retrieved October 1, 2008, from <http://web.upmc-biosecurity.org/video/hearings/20060405-allhazardsmedprep/>
- International Mass Fatalities Center. (2004). *International Mass Fatalities Center Home Page*. Retrieved November 14, 2007, from <http://www.massfatalities.com/>

- Iowa Department of Public Health. (2005). *Pandemic influenza response plan index*. Des Moines, Iowa: Iowa Department of Health. Retrieved October 1, 2008, from http://www.idph.state.ia.us/adper/common/pdf/flu/flu_response_overview.pdf
- Johns Hopkins Bloomberg School of Public Health News Center. Retrieved May 14, 2008, from www.jhsph.edu/publichealthnews/press_releases/2008/doocy_burma.html
- Kim, W. C. & Mauborgne, R. (2005). *Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant*. Boston, MA: Harvard Business School Press.
- Kimery, A. L. (2008, June 17). Public health planners continue to see problems with fed pandemic plans. *HS Today*, 1-3. Retrieved August 28, 2008, from <http://hstoday.us/content/view/3856/149/>
- Koh, H. K. et al. (2006, March-April). Building community-based surge capacity through a public health and academic collaboration: The role of community health centers. *Public Health Reports*, 121(2), 211-216. Retrieved October 1, 2008 from <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1525264>
- LAWriter® Ohio Laws and Rules, *Chapter 313: Coroner* (05-21-1998; 05-18-2005; 08-17-2006; 04-05-2007), retrieved July 16, 2008, from <http://codes.ohio.gov/orc/313>
- LAWriter® Ohio Laws and Rules, *Chapter 313: Coroner* (11-04-1965), retrieved July 16, 2008, from <http://codes.ohio.gov/orc/313>
- LAWriter® Ohio Laws and Rules, *Chapter 3705: Vital Statistics* (01-01-1998; 08-17-2006), retrieved July 20, 2008, from <http://codes.ohio.gov/orc/3705.16>
- LAWriter® Ohio Laws and Rules, *Chapter 3709: Health Districts* (12-11-1967), retrieved July 20, 2008, from <http://codes.ohio.gov/orc/3709>
- LAWriter® Ohio Laws and Rules, *Chapter 3709: Health Districts* (05-03-1990; 10-01-1953), retrieved July 20, 2008, from <http://codes.ohio.gov/orc/3709>
- LAWriter® Ohio Laws and Rules, *Chapter 5502: Department of Public Safety* (05-15-02), retrieved July 16, 2008, from <http://codes.ohio.gov/orc/5502>
- LAWriter® Ohio Laws and Rules. *Ohio Revised Code 5502 Department of Public Safety: 5502.22 Emergency Management Agency*, Effective 09-22-1999, retrieved September 16, 2007, from <http://codes.ohio.gov/orc/5502.22>
- Lee, B., LaDue, L., & Linstrom, J. (2007, February). Mass fatality management planning for pandemic influenza. Panel presentation at the 2007 Advanced Practice Centers Training Conference, Washington, D.C.

- Levine, P. J., Gebbie, E. N., & Qureshi, K. (2007, September-October). Can the healthcare system meet the challenge of pandemic flu?: Planning, ethical, and workforce considerations. *Public Health Reports*, 122, 573-577.
- London Resilience Partnership. (2008). London mass fatalities plan. *London resilience: Preparing for emergencies*. Retrieved October 1, 2008, from <http://www.londonprepared.gov.uk/londonplans/emergencyplans/massfatality.jsp>
- Los Angeles County. (2008). *Mass fatality incident management: Guidance for hospitals and other healthcare entities*. Los Angeles, California: Los Angeles County Government. Retrieved September 8, 2008, from <http://ems.dhs.lacounty.gov/ManualsProtocols/MFIM/MFIGuidanceForHospitals808.pdf>
- Maitre, M. (2006, July 29) Heat linked to more than 130 deaths. *Oakland (CA) Tribune*. Retrieved October 2, 2008 from http://findarticles.com/p/articles/mi_qn4176/is_20060729/ai_n16650306
- Montana Department of Public Health and Human Services (PHHS). (2006, May). *Pandemic influenza response plan*. Helena, MT: Montana Department of PHHS. Retrieved May 28, 2008, from <http://www.dphhs.mt.gov/PHSD/Communicable-disease/pandemic-flu-plan/3flu-2006-RevisedFluPlan-5-17-06.pdf>
- Morgan, O. W., Sribanditmongkol, P., Perera, C., Sulasmi, Y., Van Alphen, D., & Sondorp, E. (2006, June). Mass fatality management following the South Asian tsunami disaster: Case studies in Thailand, Indonesia, and Sri Lanka, *PLoS Med*, 3(6), e195. Retrieved November 27, 2007, from <http://medicine.plosjournals.org/perlserv/?request=getdocument&doi=10.1371/journal.pmed.0030195&ct=1>
- Morgan, O., Tidball-Binz, M., & Van Alphen, D., (Eds.). (2006). *Management of dead bodies after disaster: A field manual for first responders*. Washington, D.C.: Pan American Health Organization. Retrieved April 25, 2008, from <http://www.paho.org/english/dd/ped/DeadBodiesFieldManual.htm>
- Munro, B. H. (1997). *Statistical Methods for Health Care Research*, 3rd Ed. Philadelphia, PA: Lippincott.
- National Disaster Medical System (NDMS). (n.d.). Disaster mortuary operational response teams (DMORT): How it all started. Retrieved October 2, 2008, from <http://www.dmort.org/DNPages/DMORTHISTORY.htm>
- NIMS Online.com. (2004). Chapter II – NIMS command and management. Retrieved August 19, 2008, from http://www.nimsonline.com/nims_3_04/command_and_management.htm

- Nixon, G. (2008, January 11). "From the president." *Association of Ohio Health Commissioners Newsletter*. No longer available on the internet.
- North Carolina Department of Health and Human Services (HHS). (2007). Mass fatality planning: Appendix K-1," *North Carolina pandemic influenza plan*. Charlotte, NC: NC HHS. Retrieved November 3, 2007, from <http://www.epi.state.nc.us/epi/gcdc/pandemic.html>
- NORTHCOM & HHS Fatality Management Pandemic Influenza Working Group Conference. (2006b). *Scene operations, to include identification, medico-legal investigation protocols and command and control of mass fatalities resulting from a pandemic influenza event in the United States*. Colorado Springs, CO: NORTHCOM., Retrieved November 3, 2007, from www.icfa.org/docs/white_paper.doc
- NORTHCOM & HHS Fatality Management Pandemic Influenza Working Group Conference. (2006c). *The provision of family assistance and behavioral health services in the management of mass fatalities resulting from a pandemic influenza in the United States*. Colorado Springs, CO: NORTHCOM. Retrieved November 3, 2007, from www.icfa.org/docs/white_paper2.doc
- Northern Command (NORTHCOM) & United States Department of Health and Human Services (HHS) Fatality Management Pandemic Influenza Working Group Conference. (2006a). *Funeral services and final disposition of mass fatalities resulting from a pandemic influenza in the United States*. Colorado Springs, CO: NORTHCOM. Retrieved November 3, 2007, from <http://www.ofdamrt.org/panflu/whitepapers/FSandFinalDispWhitePaper.pdf>
- OEMA. (2007a). Emergency Support Function # 8 (ESF 8): Public health and medical services annex, *State of Ohio Emergency Operations Plan (EOP)*. Columbus, OH: OEMA, 8-1 ~ 8-16. Retrieved October 2, 2008, from http://www.ema.ohio.gov/Ohio_EOP/2007/esf_8.pdf
- OEMA. (2007b). ESF 8: Tab C – Human infectious disease incident plan," *State of Ohio EOP*. Columbus, OH: OEMA, 8-35 ~ 8-78. Retrieved October 2, 2008, from http://www.ema.ohio.gov/Ohio_EOP/2007/esf_8_tab_c.pdf
- OEMA. (2007c). ESF 8: Tab D – Acute mass fatalities incident response plan. *State of Ohio EOP*. Columbus, OH: OEMA, 8-79 ~ 8-94. Retrieved November 14, 2007, from http://www.ema.ohio.gov/Ohio_EOP/2007/esf_8_tab_d.pdf
- OEMA. (2008). ESF 8: Tab E – Non-acute mass fatalities incident response plan. *State of Ohio EOP*. Unpublished plan scheduled for public release late fall 2008.
- Ohio Department of Health (ODH). (2006). *Pandemic influenza preparedness and response plan*. Columbus, OH: ODH. Retrieved November 3, 2007, from <http://www.ohiopandemicflu.gov/>

- Ohio Department of Public Safety. (2005). Ohio Emergency Management Agency: Who we are and what we do. Retrieved July 20, 2008, from <http://www.ema.ohio.gov/oema.asp>
- Ohio Emergency Management Agency (OEMA). (2006). *State of Ohio Emergency Operations Plan (EOP)*. Columbus, OH: OEMA, 1-481. Retrieved November 17, 2007, from www.ema.ohio.gov/ohio_eop/contents.pdf
- Ohio Funeral Directors Association (OFDA). (2008). OFDA mortuary response team. *OFDA-MRT*. Columbus, OH: OFDA. Retrieved October 1, 2008 from <http://www.ofdamrt.org/>
- Ohio Homeland Security. (2007). *The Ohio Homeland Security Strategic Plan: Prevention, Protection, Response, Recovery*, Version 3. Columbus, OH: Ohio Homeland Security.
- Ohio State Coroners Association (OSCA) (2005). Our mission. Retrieved July 16, 2008, from <http://www.osca.net/mission.php>
- Phillips, S. (2006). Current status of surge research. *Academic Emergency Medicine*, 13, 1103-1108, Retrieved October 2, 2008, from <http://www.ahrq.gov/research/jul07/0707RA12.htm>
- Philpott, D. (2007, January). The pandemic preparedness handbook [Special report]. *Homeland Defense Journal*. Retrieved November 3, 2007, from www.homelanddefensejournal.com/hdl/pphandbook.htm
- Region of Waterloo, Public Health. (2007, April). Key considerations when planning for a surge in natural deaths during an influenza pandemic: Appendices 27~28. *Community Pandemic Influenza Preparedness Plan – Waterloo Region*. Waterloo Region, Canada: Region of Waterloo Public Health. Retrieved November 3, 2007, from www.waterlooregionpandemic.ca/en/planning/resources/Chapter17Appendices.pdf
- Reina, D. S. & Reina, M. L. (2007). Building sustainable trust. *Practitioner*, 29(1): 36-42. Retrieved November 3, 2007 from www.reinatrustbuilding.com/documents/ODN%20Building%20Sustainable%20Trust.pdf
- Schmitz, Danielle. Executive Director, Central Texas Regional Advisory Council from February – May 2008. Email communication.
- Schoch-Spana, M. (2000, December), Implications of pandemic influenza for bioterrorism response. *Clinical Infectious Diseases*, 31(6): 1409-1413.

- Schoch-Spana, M. (2008). *Handcuffing the flu: Can a law enforcement/national security approach to pandemic preparedness protect the American people?* Remarks delivered for an ACLU Panel Discussion at the National Press Club, Washington, D.C. Retrieved February 28, 2008, from <http://www.upmc-biosecurity.org/website/resources/commentary/2008-01-14-handcuffingflu.html>
- Schoch-Spana, M., C. Franco, J.B. Nuzzo and C. Usenza on behalf of the Working Group on Community Engagement in Health Emergency Planning. (2007). Community engagement: leadership tool for catastrophic health events, *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*, 5(1): 8-25. Retrieved October 2, 2008, from http://www.upmc-biosecurity.org/website/focus/community_engage/2007_working_group/full_report.html
- Schonlau, M., Fricker, R. D., & Elliott, M. N. (2002). *Conducting Research Surveys via E-Mail and the Web*. Santa Monica, CA: RAND Corporation.
- Smith, L. (2006, October 20). The overlooked pandemic. *Baltimore Sun* (Health Special Report). Retrieved June 16, 2008, from <http://www.courant.com/news/health/bal-flu1020,0,3835404.story?page=1>
- State of Illinois. (2006). *Pandemic Influenza Preparedness and Response Plan*, Version 2.05. Springfield, IL: IL Department of Public Health. Retrieved January 12, 2008, from http://www.idph.state.il.us/pandemic_flu/planning.htm
- Steele, R. (2007). Open source intelligence. In L. K. Johnson and J. Wirtz (Eds.) *Intelligence and National Security: The Secret World of Spies*. Oxford, United Kingdom: Oxford University Press.
- Sullivan, G. R. (1997). *Hope is Not a Method*. New York, NY: Broadway Publishing Group. Retrieved August 10, 2008, from <http://www.randomhouse.ca/catalog/display.pperl?isbn=9780767900607>
- Swinton, L. (n.d.). Kurt Lewin's force field analysis: Decision making made easy. *Management for the Rest of Us*. Retrieved September 29, 2008, from <http://www.mftrou.com/support-files/lewins-force-field-analysis.pdf>
- Texas Hospital and Public Health Emergency Programs. (2008, January 15). Joint meeting notes (Unpublished). Retrieved May 29, 2008, from www.dshs.state.tx.us/comprep/jointmeetings/HPP%20PHEP%201_15_08%20Meeting%20Notes.doc
- The Infrastructure Security Partnership (TISP). (2006). *Regional disaster resilience: A guide for developing an action plan*. Reston, VA: TISP. Retrieved January 12, 2008 from http://www.tisp.org/rdr_guide

- The Keystone Center. (2007). *The public engagement project on community control measures for pandemic influenza: Findings and recommendations from citizen and stakeholder deliberation days*. Keystone, CO: The Keystone Center for Science and Public Policy. Retrieved February 17, 2007, from http://www.keystone.org/spp/documents/FinalReport_Community%20Control5_2007spc.pdf
- The Ohio State University (OSU) Office of Workforce Development (OWD) and its Ohio Center for Public Health Preparedness. Retrieved September 13, 2008, from <http://cph.osu.edu/workforcedevelopment/>
- The SurveyMonkey Team. (2007). The simple way to create surveys. Retrieved April 17, 2008, from <http://www.surveymonkey.com/Default.aspx>
- The SurveyMonkey Team. (2008). *SurveyMonkey user manual: Creating, distributing, and analyzing surveys within a registered account*. Portland, OR: SurveyMonkey. Retrieved June 30, 2008, from <http://s3.amazonaws.com/SurveyMonkeyFiles/UserManual.pdf>
- The White House. (2005). *National Strategy for Pandemic Influenza*. Washington D.C.: Homeland Security Council. Retrieved November 30, 2007, from <http://www.whitehouse.gov/homeland/nspi.pdf>
- The White House. (2007a). *Homeland security presidential directive 21 (HSPD-21): Public health and medical preparedness*. Washington, D.C.: Office of the Press Secretary. Retrieved November 5, 2007, from <http://www.whitehouse.gov/news/releases/2007/10/20071018-10.html>
- The White House. (2007b). *National strategy for pandemic influenza: Implementation plan one year summary*. Washington, D.C.: Homeland Security Council. Retrieved November 11, 2007, from <http://www.whitehouse.gov/homeland/pandemic-influenza-oneyear.html>
- The Working Group on Governance Dilemmas in Bioterrorism Response. (2004, January). Leading during bioattacks and epidemics with the public's trust and help. *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, And Science*, 2(1): 25-40. Retrieved October 3, 2008, from <http://www.liebertonline.com/doi/abs/10.1089/153871304322964318>
- Thomas, G. F., Hocevar, S. P., & Jansen, E. (2006). *A diagnostic approach to building collaborative capacity in an interagency context*. Monterey, CA: Naval Postgraduate School. Retrieved January 12, 2008, from http://acquisitionresearch.net/index.php?option=com_content&task=view&id=102&Itemid=41

- Trust for America's Health Website. Retrieved May 17, 2008, from <http://healthyamericans.org/reports/bioterror07/http://healthyamericans.org/reports/bioterror07/>
- United States Government Accountability Office (GAO). (2007). *Influenza Pandemic: Opportunities Exist to Address Critical Infrastructure Protection Challenges that Require Federal and Private Sector Coordination* (GAO-08-36). Washington, D.C.: GAO. Retrieved October 2, 2008, from <http://www.gao.gov/products/GAO-08-36>
- Virginia Department of Health. (2006). Planning for mass fatality incidents. Retrieved October 3, 2008, from <http://www.vdh.virginia.gov/medExam/documents/PanfluMgmtPamphlet.pdf>
- Virginia Department of Health. (2008, June 19). Mass fatality planning. Retrieved October 2, 2008, from <http://www.vdh.state.va.us/MedExam/planning.htm>
- Webster's New World College Dictionary. (2005). Retrieved November 4, 2007, from <http://www.yourdictionary.com/legacy>
- WHO. (2007). *Mass Casualty Management Systems: Strategies and Guidelines for Building Health Sector Capacity*. Geneva, Switzerland: WHO. Retrieved November 2, 2007, from http://www.who.int/hac/techguidance/MCM_inside_Jul07.pdf
- WHO. (2008). Epidemic and pandemic alert and response. Retrieved April 19, 2008, from <http://www.who.int/csr/country/en/index.html>
- World Health Organization (WHO). (2005). WHO global influenza preparedness plan: The role of WHO and recommendations for national measures before and during pandemics. Geneva, Switzerland: WHO Department of Communicable Disease. Retrieved November 2, 2007 from http://www.who.int/csr/resources/publications/influenza/GIP_2005_5Eweb.pdf

THIS PAGE INTENTIONALLY LEFT BLANK

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
Ft. Belvoir, Virginia
2. Dudley Knox Library
Naval Postgraduate School
Monterey, California
3. Anke Richter
Naval Postgraduate School
Monterey, California
4. Stanley B. Supinski
Naval Postgraduate School
Monterey, California
5. Kathie S. McCracken
Office of Health Affairs, Department of Homeland Security
Washington, D.C.
6. Alvin Jackson
Director, Ohio Department of Health
Columbus, Ohio
7. Steve Wagner
Chief, Prep Policy and Planning, Ohio Department of Health
Columbus, Ohio
8. Adriana Pust
Health Planning Administrator, Ohio Department of Health
Columbus, Ohio
9. Nancy Dragani
Executive Director, Ohio Emergency Management Agency
Columbus, Ohio
10. Brad Schwartz
State Planner, Ohio Emergency Management Agency
Columbus, Ohio
11. Carol Jacobson
Director Emergency Managemen, Ohio Hospital Association
Columbus, Ohio

12. Frank Holtzhauer
College of Public Health, The Ohio State University
Columbus, Ohio
13. Victoria Johnson
Senior Analyst, National Association of County and City Health Officers
Washington, D.C.
14. Dennis McGowan
Deputy Director, National Mass Fatalities Institute
Cedar Rapids, Iowa
15. Lisa LaDue
Deputy Director, National Mass Fatalities Institute
Cedar Rapids, Iowa
16. Peter R. Teahan
President, International Mass Fatalities Center
Cedar Rapids, Iowa
17. Elin Gursky
Principal Deputy for Biodefense, Analytic Services Inc.
Washington, D.C.